BID SOLICITATION NOTICE

TO RECEIVE A BID PACKAGE, BIDDER MAY EITHER DOWNLOAD THE BID FROM THE AUTHORITY'S WEBSITE AT http://www.state.nj.us/turnpike/purchasing.html OR REQUEST A BID BY COMPLETING THIS FORM AND FAXING IT TO THE NUMBER STATED BELOW. FOR RECORD KEEPING PURPOSES, WE REQUEST THAT THE BIDDER COMPLETE THIS FORM AND RETURN TO US, EVEN WHEN BIDDER IS DOWNLOADING THE BID. THIS IS THE ONLY NOTICE OF BIDDING FOR THE FOLLOWING GOODS / SERVICES YOU WILL RECEIVE.

THE NEW JERSEY TURNPIKE AUTHORITY

PROCUREMENT AND MATERIALS MANAGEMENT DEPARTMENT

New Jersey Turnpike Administrative Offices
P.O. Box 5042
581 Main Street
Woodbridge, New Jersey 07095-5042
Tel. - 732-750-5300 Fax - 732-750-5399

TITLE: **7-CUBIC YARD DUMP TRUCKS**

BID NO: **R-105544**

DUE DATE: **FEBRUARY 5, 2014**

TIME: **11:00 AM**

SUBMIT BIDS BEFORE THE DUE DATE AND TIME TO THE ABOVE ADDRESS

BIDDER INFORMATION (PLEASE PRINT)

_____
NAME OF BIDDING ENTITY

_____
ADDRESS

_____
CITY, STATE AND ZIP CODE

_____
E-MAIL ADDRESS

_____ _____
REPRESENTATIVE TO CONTACT-NAME & TITLE TELEPHONE NO.

_____ _____
FEDERAL TAX I.D. NO. or TAXPAYER I.D. NO. FAX NO

☐ **WE HAVE DOWNLOADED THE BID FROM THE AUTHORITY WEBSITE**

THE NEW JERSEY TURNPIKE AUTHORITY

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INVITATION TO BID

TITLE: **7-CUBIC YARD DUMP TRUCKS**

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SUBMIT BIDS BEFORE THE DUE DATE AND TIME TO THE ABOVE ADDRESS

BIDDER INFORMATION
(TO BE COMPLETED BY THE BIDDER)
Please Print

_____
NAME OF BIDDING ENTITY

_____
ADDRESS

_____
CITY, STATE AND ZIP CODE

_____
E-MAIL ADDRESS

_____ _____
REPRESENTATIVE TO CONTACT-NAME & TITLE TELEPHONE NO.

_____ _____
FEDERAL TAX I.D. NO. or TAXPAYER I.D. NO. FAX NO.

_____BUSINESS CORPORATION_____PARTNERSHIP_____INDIVIDUAL

_____OTHER (SPECIFY):_____

BIDDER GUIDELINES/CHECKLIST

PURSUANT TO N.J.S.A. 27:23-6.1 AND N.J.A.C. 19:9-2.1 et seq. BID PROPOSALS WHICH FAIL TO CONFORM TO THE FOLLOWING REQUIREMENTS MAY BE REJECTED:

1. Bid must be received at or before the public opening time stated on the cover page at the following place: New Jersey Turnpike Authority, Administration Building, 581 Main Street, Woodbridge, New Jersey 07095. Telephone or Facsimile proposals will not be accepted.

2. The bid proposal must include all price information. Proposal prices shall include delivery of all items F.O.B. destination or as otherwise provided. Price quotes must be firm through issuance of contract.

3. All bid proposal prices must be typed or written in ink. Quote the specified unit of measure. If bidding an alternate, provide detailed specifications.

4. All corrections, white-outs, erasures, re-striking of type, or other forms of alteration or the appearance of alteration, to unit and/or total prices must be initialed in ink by the bidder.

5. **Have you included the following documents?**
   - (a) State of New Jersey Division of Revenue Business Registration Certificate(s)
   - (b) Certification of Registration with the Secretary of State (only if a foreign (non-NJ) corporation)
   - (c) Acknowledgement of Requirement for Disclosure of Political Contributions (ELEC)
   - (d) Public Works Contractor Registration Certificate(s) (if applicable)
   - (e) Affirmative Action Information Sheet with Certificate or Form AA302
   - (f) Signed Mandatory Equal Employment Opportunity Language
   - (g) SBE/WBE/MBE Certificates and Form
   - (h) Vendor Disclosure Form (EO129 - Location of Services)
   - (i) Notice of Set-Off for State Tax (P.L. 1999, c.159)
   - (j) Automobile Waiver
   - (k) Insurance Requirement
   - (l) **See the Authority's Instruction to Bidders (attached) for a complete list of the Authority's standard contract Terms and Conditions, as well as Required Forms that must be included with the bid.**

6. **Failure to comply with the requirements set forth in 1-5 above may result in bid rejection.**

7. **This Request for Bids requires the following Mandatory Documents or the bid will be rejected:**

   Bid Bond and/or Letter of Surety, Cashier's Check Requirement
   Stockholder/Partnership Disclosure Statement

8. Bidder must sign the Bid

9. 3-Year Open End Option

REQUEST FOR BIDS
THIS IS NOT AN ORDER

DATE OF REQUEST:

Sealed Bids R-105544 will be received at the New Jersey Turnpike Authority Administrative Offices, 581 Main St., Woodbridge, New Jersey, as stated on the cover page at which time and place said proposal will be publicly opened and read. Bidders mailing Bids should allow for their normal mail delivery time to ensure timely receipt of their Public Bids. Please be advised that using overnight / next-day delivery service does not guarantee overnight/next-day deliveries to our location. The Authority will not be responsible for any bid not being received by the required date and time.

INTENTION

It is the intention of the Authority to issue a Purchase Order for the procurement of **7-CUBIC YARD DUMP TRUCKS**. Items purchased under this Agreement will be delivered as directed by the Authority. The term of the contract shall be for one year with the option to extend for two additional one-year terms at the Authority's discretion and Vendor's concurrence. Please contact Christine Noble with any questions regarding this procurement contract at 732-750-5300 X 8623.

BID SHEET INSTRUCTIONS

Prospective Bidders should follow all instructions in this Request for Bids and in the standard Instructions to Bidders issued by the Authority, and any other documents issued by the Authority in connection with this Request for Bids (collectively, "Bid Documents"). Prospective Bidders must examine the Bid Documents carefully before bidding and must ask the Director of Procurement and Materials Management Department in writing for any interpretation or correction of any apparent ambiguity, inconsistency or apparent error therein. Any written request for interpretation or correction shall be directed to the Director of Procurement and Materials Management Department. Written requests can be submitted by FAX at 732-750-5399. If necessary, an interpretation or correction shall be issued by the Director of PMM as an Addendum and FAXED to prospective Bidders who have obtained the Bid Documents. Upon the issuing of an Addendum, the content of the Addendum shall become part of the Bid Documents. **Requests for interpretation or correction shall be considered only if received at least 5 business days prior to the bid opening date**.

Only written interpretations or corrections issued by the Director of PMM by Addendum shall be binding.

The submission of the Bid is conclusive evidence that the Bidder is fully aware of the conditions, requirements, and details as stated in the Bid Documents. If the Bidder, prior to submitting its Bid, fails to notify the Director of PMM of the existence of an ambiguity, inconsistency in the Bid Documents, a Bid will conclusively be presumed to have been based upon the interpretation of such ambiguity or inconsistency.

All erasures, interpolations or other physical changes on the Bid form shall be signed or initialed by the bidder. Bids containing any conditions, omissions, erasures, alterations, or items not called for in this Request for Bids, or irregularities of any kind, may be rejected by the Authority, in its sole discretion, as being incomplete. The bidders shall not attach conditions, limitations or provisos to their Bid, except in cases where "Exceptions" are permitted.

The Authority will accept Approved Equivalent items on this bid. If a bidder is basing the proposal on items other than what is specified, and wishes the items he proposes to be considered as an "Approved Equivalent," the Bidder shall enter a price on the bid sheet then submit on the Exception Sheet in the exact format of the line item on the Request for Bids contained herein, the item number, an item description, including manufacturers name, model number, and packaging quantities of those Items which the Bidder proposes to substitute.

Bidders must supply a price for every item listed. Bids not having a price in all listed items may be rejected. The bid will be awarded to the vendor who supplies the lowest total cost for ALL items as listed in the bid.

Bidders must quote only one price per line item. If a bidder quotes multiple prices per line item, the bid proposal may be rejected.

The Authority will purchase amounts of any given item as needed, at the sole discretion of the Authority and shall not be bound by any quantities listed. The Authority reserves the right to make reasonable increases to line item quantities. All items are to be bid FOB Destination. All shipping, handling, and other costs should be considered in the bid price.

ANY INQUIRIES CONCERNING THIS BID MUST BE SENT VIA FAX NO LATER THAN FIVE (5) BUSINESS DAYS BEFORE BID OPENING

REQUEST FOR BIDS

MATERIAL AND SERVICE DESCRIPTION

ITEM	QTY	UNIT OF MEAS	DESCRIPTION	UNIT PRICE	TOTAL DOLLAR AMOUNT
1	10	Each	40,000 lbs. G.V.W.R. Conventional Cab & Chassis Equipped with 7-Cubic Yard Stainless Steel Dump Body, Tailgate Spreader, Snowplow Hitch, 11' Snowplow and Accessories as per specifications.	$	$

ANY INQUIRIES CONCERNING THIS BID MUST BE SENT VIA FAX NO LATER THAN FIVE (5) BUSINESS DAYS BEFORE BID OPENING

DELIVERY DATE _____, to sites as specified in the bid specifications.
Discount Terms Based On Net 30 Days Only.

NEW JERSEY TURNPIKE AUTHORITY

_____

AUTHORIZED SIGNATURE

_____/_____
Name of Company and / Authorized Signature of Bidder

SIGNATURE PAGE

ADDENDA / INQUIRIES: COMPLETE (if applicable) BEFORE SUBMITTING BID:
Receipt of Addendum / Inquiries #_____dated_____is hereby acknowledged.
Receipt of Addendum / Inquiries #_____dated_____is hereby acknowledged.

☐ **CHECK BOX IF NO ADDENDA/INQUIRY ISSUED**

(All Addenda / Inquiries must be acknowledged as indicated above.)

BID IRREVOCABLE: This offer shall be irrevocable for ninety (90) working days after the date on which the Authority publicly opens this bid except in those instances where an unsuccessful bidder has filed a Protest pursuant to N.J.A.C. 19:9-2.12. Upon notification of a Protest, Bidders are required to hold their prices for an additional 90 days. All bidders will be notified in writing of the action taken by the Authority.

OFFER/CERTIFICATION: The undersigned offers and agrees to furnish to the New Jersey Turnpike Authority the services and/or materials in compliance with all terms, conditions, specifications and addenda of the RFB, Bid Documents, and resulting contract. The undersigned further certifies understanding and compliance with the requirements of the standard terms and conditions as stated in the Instructions to Bidders included with the Bid Documents. The undersigned certifies that he or she executes this bid with full authority so to do; and that all statements contained in this bid and in this certification are true and correct, and made with full knowledge that the Authority relies upon the truth of the statements contained herein and in any statements requested by the Authority showing evidence of qualifications in awarding the contract.

I certify that the foregoing statements made by me are true. I am aware that if any of the foregoing statements made by me are willfully false, I am subject to punishment.

AUTHORIZED SIGNATURE:_____

Print Name and Title:_____

Bidding Entity:_____

Address:_____

City, State, Zip:_____

Telephone #: _____ Fax:_____

Date: # _____

NEW JERSEY TURNPIKE AUTHORITY

NO RESPONSE BID SURVEY

BID REQUISITION NUMBER: R-105544

PROPOSAL TITLE: 7- CUBIC YARD DUMP TRUCK

If you do not choose to respond to this Bid, please complete the form below:

Name of Company_____

Reason you did not respond (Check all that apply)

_____ Cannot supply product or service

_____ Cannot meet technical specifications

_____ Cannot meet delivery specifications

_____ Cannot meet legal requirements
(i.e. bid/performance/security/insurance, etc.)

_____ Cannot provide a competitive price at this time

_____ Interested in receiving specifications for informational purposes only.

_____ Insufficient lead time to respond

_____ Other:(please be specific)

Do you wish to remain on our mailing list?

_____Yes _____No

Additional comments: _____
_____
_____
_____

Signed :(optional)_____

Company:_____

ADDITIONAL YEARS PURCHASING OPTION FOR: R-105544

3- Year Open End Option: The Authority shall have the option for one (1) Model Year* from the date of Contract, to order additional units conforming to the requirements of these specifications at the same price and under the same terms and conditions as those required herein.

The Authority shall further have the option to purchase additional units conforming to these specifications for two (2) additional Model Years. Any unit(s) offered during the two (2) subsequent Model Years shall be of the model equivalent to that specified herein. In the latter instances, if there have been any price changes in the two subsequent Model Years, the vendor shall submit a request to the Authority covering the aforesaid price changes, and shall include appropriate explanation and justification for any such price changes.

Any such request for price adjustment shall be in writing and directed to the Director, PMM Department and shall be accompanied by the following evidence as a basis for your request;

1. The published price lists for equipment, which were in effect at the time of your original proposal.
2. The equivalent published price lists in effect at the time of your request.
3. Any additional evidence which the Authority deems necessary in the evaluation of your request.

The Authority shall, within its sole discretion, have the right to accept the price changes proposed by the vendor or if it is so desires re-bid the requirement.

*Model Year is defined as the Model Year of the Manufacturer of the unit(s) offered by you in this Request For Quotation. In that instance where proposals are for equipment for which "Model Year" and "Production Cut-Off Dates" are undefined or non-existent, the "Model Year" is defined, for bid purposes, as one calendar year from the date on which the Contract is accepted. The last date on which orders may be placed for the Model currently in effect is _____ .

NEW JERSEY TURNPIKE AUTHORITY

GENERAL INSTRUCTIONS AND SPECIFICATIONS FOR: 7-CUBIC YARD DUMP TRUCK AND ACCESSORIES

Quantity	Description	Maximum Delivery Date
10	40,000 lbs. G.V.W.R. Conventional Cab & Chassis Equipped with 7-Cubic Yard Stainless Steel Dump Body, Tailgate Spreader, Snowplow Hitch, 11' Snowplow and Accessories	180 Days After Receipt of Order

SPECIFICATIONS:
CC-2014 CAB CHASSIS
DB-2014 SEVEN CUBIC YARD DUMP BODY
CHS-2014 CENTRAL HYDRAULIC SYSTEM
TS-2014 TAILGATE SPREADER
LBS-2014 LIGHTBAR STANCHION
RL-2014 ROTATOR LIGHTS
SPL-2014 SNOW PLOW LIGHTS
SPH-2014 SNOW PLOW HITCH
SP-2014 SNOW PLOW
7PTC 7-POLE ROUND PIN TRAILER CONNECTORS ON TRUCKS AND TRAILERS
STRIPE PLATE/DUMP TRUCK

COMPLIANCE WITH RULES AND REGULATIONS: The unit and associated equipment furnished must comply with all Federal and State Motor Vehicle Safety Laws and Regulations and shall be capable of passing the New Jersey State Motor Vehicle Inspection Laws, where applicable.

ENERGY STAR REQUIREMENTS: If applicable for items specified in bid package, the vendor must provide products that earn ENERGY STAR and meet the ENERGY STAR specifications for energy efficiency. The vendor is encouraged to visit energystar.gov for complete product specifications and updated lists of qualifying products. The ENERGY STAR label must also be affixed to each delivered item. The bidder's signature on the signature page certifies that items so indicated that have earned ENERGY STAR and meet the ENERGY STAR specifications or other standards for energy efficiency will be supplied.

ERRORS AND OMISSIONS: Inadvertent omissions or errors in the attached specifications must be brought to the attention of the New Jersey Turnpike Authority's Director of Procurement and Materials Management at 732-750-5300 before bid submission date. If, with knowledge of such error or omission and prior to the correction thereof, the bidder proceeds with any work

affected hereby, they shall do so at their own risk and the work so done shall not be considered as work done under and in performance of this Agreement unless and until approved and accepted.

PILOT MODEL: Questions, which arise before or during the preparation of the pilot model, shall be addressed in writing via e-mail from the vendor to Peter Perperas (Project Supervisor), perperas@turnpike.state.nj.us at the New Jersey Turnpike Authority on a not to delay basis.

The awarded bidder shall make available one **fully completed** pilot model for inspection and approval by the Authority. The unit shall be transported (responsibility of the awarded vendor) to the NJTA Garden State Parkway Division's Telegraph Hill Maintenance Facility located at Garden State Parkway Exit 116 in Holmdel, NJ 07733.

DELIVERY INSTRUCTIONS: Vendor must contact Peter Perperas (Project Supervisor) at 732-442-8600 ext. 2868 for authorization to schedule date and time prior to delivery. All units must be pre-delivery serviced, completely assembled, operational, and cleaned prior to delivery. **Deliveries shall be made to the NJTA Garden State Parkway Division Telegraph Hill Central Maintenance Facility located at GSP Exit 116 in Holmdel, NJ 07733.**

A. Vendor shall be responsible for all delivery, shipping and pick-up expenses.

B. The following administrative package **must** accompany all deliveries:

- Certificate of Origin: stamped "Sales Tax Satisfied" and shall be made out to New Jersey Turnpike Authority, 581 Main St. Woodbridge, NJ 07095. Certificate of Origin shall have current date and be hand delivered to Peter Perperas after final acceptance of complete order.

- Invoice: purchase order number must be displayed on vendors invoice. Invoice shall have current date and be hand delivered to Peter Perperas after final acceptance of complete order.

- Warranty forms properly executed.

- Four (4) keys for each vehicle shall be furnished (each vehicle shall have an independent key code). Successful bidder must supply a key code listing for each vehicle identification number. **NO EXCEPTIONS**

- Four (4) keys, keyed alike for toolboxes or similar compartments shall be furnished for each vehicle. **NO EXCEPTIONS**

- State MVC (Motor Vehicle Commission) required inspection stickers shall be provided with each vehicle upon delivery.

- A 30 day temporary registration tag shall be applied to each vehicle.

- Federal Safety Inspections shall be performed and stickers shall be attached to the vehicles prior to delivery.

- Delivery of all units fully completed and fully compliant shall be made no later than one hundred eighty (180) days after receipt of Purchase Order.

- In the event the vendor fails to timely deliver the units, the vendor shall pay the Authority liquidated damages in the amount of $280.00 per unit for each calendar day **(No Exceptions for Liquidated Damages)** beyond the maximum delivery date, as per Dataquest's Rental Rate Blue Book for Construction Equipment.

C. All units shall be delivered with a minimum of a half tank of fuel.

WARRANTY: All units delivered must be guaranteed to be free from defects in materials, design and workmanship for a minimum of one (1) year (see additional warranty coverage's in specification) from the time of acceptance by the New Jersey Turnpike Authority. All warranties shall start upon written acceptance of units by the New Jersey Turnpike Authority. Warranty must include service availability from any manufacturers authorized dealer establishment most closely located to Parkway and Turnpike area. This repair facility may not be further than 100 miles from Telegraph Hill Central Maintenance Facility in Holmdel, NJ 07733 or Central Shops Maintenance Facility located in Hightstown, NJ 08520. If warranty service is required, the vendor who supplied the unit shall provide for pickup, delivery and repair of unit at no charge to the New Jersey Turnpike Authority. The vendor shall also have a program to include an in-house warranty. All warranty periods shall start from date of acceptance of unit by the New Jersey Turnpike Authority.

EXCEPTION SHEET: Exception sheet is furnished with each set of specifications. Bidders making exceptions must note exceptions by item and indicate substitution in lieu and submit with bid, detailed specifications on the substitution. If the vendor is submitting an alternate product, component, feature or part to what is referenced in the specifications, the proposals **must** be accompanied by descriptive literature, marked and indicate the exact items to be furnished, with an engineering drawing of the same. **Failure to supply information requested may result in rejection of bid.** Where no exception is taken, the word "None" shall be neatly printed or typed on the exception sheet. **Failure to supply information and/or failure to complete the bidder's exception spaces in the prescribed manner may disqualify bid. It shall be understood that if no exception is taken, the vendor shall supply all material exactly as specified. No substitution will be permitted after receipt of bids.**

SERVICE PARTS IDENTIFICATION FORM: Vendor shall complete the entire Service Parts Identification Form, where applicable for chassis section. Replacement parts shall be available to the general using trade, parts shall not be proprietarily manufacturer protected. **Failure to complete form may result in rejection of bid**.

UNIT INFORMATION FORM: Vendor shall complete the entire Unit Information Form. **Failure to complete form may result in rejection of bid.**

MANUFACTURER'S PRODUCTION SHEET: The vendor shall furnish one (1) copy of the actual Factory Production Sheet for each unit provided. The copies of the Factory Production Sheet shall be submitted at the time of the Authority's inspection of the unit.

TRAINING: It shall be the responsibility of the successful bidder to supply all safety, operational and service training to New Jersey Turnpike Authority personnel in accordance with all applicable ANSI and OSHA regulations. The safety and operational training shall consist of a complete review and understanding of the manufacturer's owner manual, along with actual operation of equipment. The instructor shall emphasize all proper uses for safe operation. The training shall include but not limited to all general troubleshooting of the hydraulic system and associated electronics. The instructor shall also emphasize the proper use of tools and test equipment along with general shop safety. The service seminars shall be similar to factory and manufacture type schools. The training shall be scheduled and take place at two (2) sites with a minimum of eight (8) hours training at each site designated by the New Jersey Turnpike Authority.

LABELS: Plastic stick-on labels shall not be acceptable.

ADVERTISEMENTS: No Dealer advertisements shall appear on unit or any other related equipment.

ACCESSORIES: All accessories shall be manufacturer installed when the item is available from the manufacturer.

FACILITIES: Bidders shall represent a manufacturer, which has in operation a factory adequate for the manufacture of the equipment, which it proposes to furnish. The manufacture(s) whose associated equipment or products are bid shall have a full service warranty and parts supply facility that can guarantee availability of parts within 24 hours after telephone order and shall be located within a 100 mile radius of either Central Shops Maintenance Facility (exit 8 on the NJ Turnpike) located in Hightstown, NJ 08520 or Telegraph Hill Central Maintenance Facility (exit 116 on the GSP) located in Holmdel, NJ 07733. This facility will be required to establish an in-house warranty program and provide all warranty work related to the equipment in the bid proposal. The bidder shall submit the locations, names and telephone numbers of people who are authorized to service the equipment or who can be reached for emergency service.

Location_____

Phone #_____

Contact_____
Name & Title

SPECIFICATIONS: CC-2014
CAB CHASSIS

BIDDER'S INSTRUCTIONS

IT SHALL BE THE BIDDER'S RESPONSIBILITY TO CAREFULLY EXAMINE EACH ITEM OF THE SPECIFICATION. BIDDERS MUST INDICATE WHETHER THEY COMPLY OR NON-COMPLY FOR EACH LINE ITEM IN THE SPECIFICATION. FAILURE TO PROVIDE A COMPLETED BID MAY CAUSE REJECTION OF BID. ALL NON-COMPLY RESPONSES AND/OR BIDDERS PROPOSED "APPROVED EQUIVALENTS" MUST BE FULLY EXPLAINED ON EXCEPTION FORM, NOTING SECTION AND ITEM. FAILURE TO EXPLAIN NON-COMPLY RESPONSES OR FAILURE TO SUPPLY DETAILED LITERATURE/BROCHURES ON THE BIDDERS PROPOSED "APPROVED EQUIVALENTS" MAY CAUSE REJECTION OF BID. WHERE "MINIMUM/MAXIMUM" IS SPECIFIED, BIDDERS MUST PROPOSE AT LEAST THE MINIMUM/MAXIMUM SIZES OR THE BID MAY BE REJECTED.

GENERAL:	**COMPLY YES**	**NO**
A. 2014 or new current model International 7400 or approved equivalent SFA (Set Forward Axle) 4 x 2, 6-wheel configuration.		
FRAME:		
A. 10.125" x 3.580" x 0.312" 120,000 psi minimum main frame rails, one piece, extending 20" ahead of grille.		
B. 10.813" x 3.892" x 0.312" full "C" channel reinforcement, one piece extending the entire length of main frame including the extension.		
C. 3,580,800 RBM (Resisting Bending Movement) minimum.		
D. Huck fasteners shall be used for all cross members, fuel tank, and battery box brackets.		
E. Heavy-duty channel type front bumper with ends swept back at 30° angles and bolt-on front tow hooks with opening through bumper.		
F. Bolt-on or welded frame sections shall not be acceptable.		
G. Bolt-on front tow hooks with opening through the bumper. One right and one left, within easy access to afford quick operator hook up of tow chain. Hooks shall be of drop forged steel with a minimum of 44,500 lbs. working load. Grade 8 bolts shall be used to attach hook to chassis. Each hook shall be curved upward to assure tow chain will not fall off when no tension is present. Welded on hooks shall not be acceptable.		
H. Electro-statically painted frame rails. Written certification is required.		
I. The wheelbase shall be 165", cab to axle shall be 90", and AF shall be as required for body.		

J. 40,000 lbs. G.V.W.R.		
K. The Authority reserves the right to determine final CA and AF dimension at issuance of Purchase Order.		
FRONT BUMPER:		
A. Heavy-duty steel 10" channel shall replace standard front bumper and shall be bolted via grade 8 bolts and self-locking elastic nuts to the front frame extension of the chassis.		
B. The bumper shall have means for mounting the front license plate.		
C. Two (2) steps, one (1) each side shall be constructed of 2" Bustin or approved equivalent material.		
D. Steps shall be 8" wide x 8" deep.		
E. Step brackets shall be a minimum of ⅜" x 2" A36 material.		
FRONT CATWALK:		
A. The front frame extension shall incorporate an aluminum catwalk between the bumper and the chassis.		
B. The catwalk shall be three (3) section aluminum dirt shedding and have a separate top edge for positive foothold.		
C. Material shall be Bustin or approved equivalent and be attached via rust proof stainless steel bolts with self-locking elastic insert nuts.		
D. Catwalk shall be located to provide best possible access to the chassis and engine components.		
E. The outer two (2) sections shall be capable of supporting 500 lbs.		
FRONT AXLE:		
A. 14,000 lbs. capacity front axle.		
B. Greaseable drag link and tie rods.		
C. Weight capacity of front axle **must** be able to accommodate snow plow hitch and snow plow specified in this bid package.		
FRONT SUSPENSION:		
A. 14,000 lbs. capacity front suspension.		
B. Parabolic taper-leaf front springs with shock absorbers.		
C. Spring pins shall be rubber bushed and maintenance free.		
D. 2,000 lbs. capacity auxiliary front springs.		
REAR AXLE:		
A. 26,000 lbs. capacity single reduction with driver controlled main locking differential.		
B. Axle switch shall be LED back-lighted.		
C. An automatic disengage feature shall be supplied to disengage the locking mechanism after the vehicle reaches a speed of 25 mph.		
D. Factory installed synthetic gear lube and magnetic drain plug shall be installed.		
E. Axle ratio shall enable vehicle to cruise at 65 mph at maximum G.V.W.R.		
REAR SUSPENSION:		
A. 31,000 lbs. capacity vari-rate rear springs.		
B. Include 4,500 lbs. capacity multi-leaf auxiliary springs.		

BRAKES:		
A. Brake pedal and valve shall be firewall suspended.		
B. ABS anti-lock air brakes.		
C. Diagnostic electronic capability shall inform operator and the mechanic of any malfunctions including area of system failure.		
D. Air dryer.		
E. “S” cam type on front and rear shoes.		
F. 13.2 cubic foot gear driven air compressor with dual air supply gauges.		
G. Air pressure gauges shall be located in the instrument cluster.		
H. Automatic slack adjusters.		
I. Air tanks shall be aluminum and painted black.		
J. All air lines shall be color coded.		
K. Dust shields shall be provided on front and rear brakes.		
L. Parking brake alarm shall be provided. Horn shall sound when parking brake is not set with ignition off and any door opened.		
STEERING:		
A. Full hydraulic power steering.		
B. Steering column shall be tilt style.		
EXHAUST SYSTEM:		
A. Horizontal diesel particulate filter shall be located outside frame rail and under cab floor.		
B. Exhaust pipe shall be vertically mounted on a bracket and attached to the frame rail.		
C. 90° curved exhaust pipe and heat shield shall be supplied.		
ELECTRICAL:		
A. Programmable electrical system with self-diagnostics. System shall be designed to isolate electrical problems on the input/output side of circuit and display fault codes. Color coded and continuously numbered wiring shall be supplied.		
B. All electronically controlled accessory equipment shall be interfaced to a Body Integrated Remote Power Module mounted inside cab; up to 6 outputs and 6 inputs, maximum 20 amps per channel, maximum 80 amps for each required module. (Includes 2 dash-mounted switch packs with 6 switches latched or momentary/labeled and back-lighted) with this system including but not limited to switches, controls and indicators. Anticipated provisions shall be communicated to the chassis manufacture prior to chassis build.		
C. All circuits shall be protected by manual reset circuit breakers or fuses shall be mounted in the OEM central power distribution panel.		
D. A pre-trip inspection to test exterior light functions shall be supplied that shall enable the operator to test the exterior lights (body lights, snow plow lights, parking lights, headlights low& high beam, right/left/rear turn lights, brake lights, spinner light, and warning rotator lights) by means of a button located in the cab.		

E. Three (3) 12-volt 1950 CCA maintenance free batteries with over crank protection. Batteries shall be mounted on a steel (powder coated black) box with aluminum (not painted) cover.		
F. AM/FM radio with weather band, clock, and speakers.		
G. Turn signal switch shall include “flash to pass” feature.		
H. Daytime running lights, fender mounted dual faced amber/amber directional lights in addition to front corner directional shall be provided.		
I. Taillights shall have a separate 8' of cable for left and right side body lights.		
J. Stop, turn, tail, and back-up lights shall be a Truck Lite model LED or approved equivalent.		
K. The following lights shall automatically turn on when wiper switch is engaged: • Headlights • Taillights • Marker lights		
L. Five (5) LED cab marker lights shall be provided.		
M. Wipers shall have two (2) speeds with washer and intermittent feature. Wiper control shall force wipers to their slowest intermittent speed when parking brake is set and wipers are left on for more than 30 seconds.		
N. 165-amp Delco Remy 36SI brushless, pad mounted with remote voltage sensor or approved equivalent alternator.		
O. Gauges & Lights: • Oil pressure • Water temperature • Warning lights • Voltmeter • Speedometer • Tachometer • Odometer • Trip miles • Engine hours • Trip hours		
P. Dual electric horns.		
Q. Dual single tone rectangular chrome air horns mounted on top of cab with snow shields.		
R. Back-up alarm shall be a Preco 45-AA or approved equivalent. Shock mounted alarm shall be mounted under right taillight.		
S. Body builder harness shall be located outside of cab. Included shall be stop, tail, turn, and marker light circuits, ignition controlled auxiliary feed, and ground.		
T. Chassis manufacture shall supply 2-way radio wiring with 20 amp fuse protection. Shall include 5 amp fuse and be routed to overhead radio console.		

U. A weatherproof module for body builder connections shall be located inside the cab.		
V. All switches must be back-lighted and (OEM) labeled.		
W. All electrical powered auxiliary equipment not installed by chassis manufacturer shall be wired in accordance with section A & B (ELECTRICAL) and include proper circuit protection. All wiring shall be installed in a weather tight junction box or weather pack connector. Solder-less connectors is unacceptable. Any holes drilled for installation of accessories, wiring, brackets, etc. shall be properly primed, sealed with silicone and painted prior to installation to prevent rust.		
X. Chassis manufacture shall supply a 36" wiring harness for separate snow plow head lights and turn signals with LED back-lighted rocker type switch.		
Y. Snowplow lights shall be supplied. See Specifications: Snow Plow Lights.		
Z. In addition to the control switch, all lighting and accessories shall turn off with ignition key “off” except for Federal D.O.T. requirements.		
AA. It shall be the responsibility of the body supplier to ensure capability of installed equipment with switches provided by chassis manufacturer. The following switches shall be provided by the chassis manufacturer and will be incorporated in the chassis standard wiring and circuit protection: • Plow lights • Front rotators • Rear strobes • Spinner light **NO EXCEPTIONS**		
ENGINE:		
A. Electronic, 6-cylinder turbo-charged diesel engine.		
B. 310 Horsepower minimum @ 2000 rpm.		
C. 1050 lb./ft. Torque minimum @ 1050 rpm.		
D. 570 Cubic inch displacement.		
E. Replaceable “wet type” cylinder piston liners. Oil cooled pistons.		
F. Positive valve rotators on both intake and exhaust valves.		
G. Heavy-duty starter with over crank protection.		
H. Cruise control integral with steering wheel.		
I. Provision for remote mounted engine control to include wiring for body builder installation of PTO controls, ignition switch controlled.		
J. Heavy-duty radiator with two (2) speed air operated fan drive.		
K. Ethylene Propylene Diene Monomer (EPDM) hoses or approved equivalent.		
L. Constant torque heat shrink radiator clamps.		
M. 120-volt engine block heater with weather protected flip plug cover shall be located under driver’s door.		
N. Extended long life coolant protected to at least -40° F. The system shall be tagged indicating make, type of anti-freeze and degree of protection.		
O. Low coolant level warning light and audible alarm.		

P. Automatic engine shutdown system for oil pressure, coolant temperature, and coolant level with a 30 second delay and auto override.		
Q. Heated fuel/water separator.		
R. Integrated fuel pressure sensor.		
S. All engine and emission related system fluids shall remain as a stable liquid unaided within the normal expected vehicle ambient temperature operating range of -20° F to 100° F.		
T. Oil pan: an extended life coated oil pan consisting of metal/plastic/metal construction shall be provided. The material shall be a single sheet composite with two (2) layers of sheet metal sandwiching plastic material. The triple composite shall have an electro-deposition prime coat with powder coating for the final finished coat. Written certification is required.		
TRANSMISSION:		
A. Allison 3000 RDS or approved equivalent.		
B. Five (5) forward speeds automatic with dash mounted push button control.		
C. Included shall be a transmission oil cooler and temperature gauge.		
D. Synthetic transmission fluid shall be used and installed by OEM.		
E. Furnished PTO provision and dash mounted temperature gauge.		
F. Chassis manufacturer installed PTO accommodation for electric cover hydraulic PTO with dash mounted, back-lighted switch and indicator light in gauge cluster. Shall have wiring incorporated and over-speed protection programmed within the OEM electrical system.		
FUEL TANK:		
A. 50-gallon minimum capacity aluminum fuel tank mounted under cab and shall include stainless steel straps.		
B. Thermostat controlled electric fuel heater and filter with filter restriction/change indicator.		
C. Fuel tank shall be labeled in 1" high green letters **"DIESEL FUEL ONLY"**.		
D. Vent tube for fuel tank shall be attached to a bracket via zip-tie.		
FRONT TIRES & WHEELS:		
A. Two (2) Goodyear or approved equivalent 12R22.5, 16 ply highway tread radials.		
B. Hub piloted black powder coat paint 8.25" steel disc wheels.		
REAR TIRES & WHEELS:		
A. Four (4) Goodyear or approved equivalent 12R22.5, 16 ply highway tread radials.		
B. Hub piloted black powder coat paint 8.25" disc wheels.		
C. Rear plain black mud flaps (No Advertisements).		
SPARE TIRES & WHEELS:		
A. One (1) spare tire shall be supplied for each vehicle ordered.		
B. Spare tires and wheels shall be identical to make and model of what shall be supplied on vehicle.		

PINTLE HOOK AND PLATE:		
A. The pintle hook shall be a forged steel ridge mount design sized to carry a 6,000 lbs. vertical load and 30,000 lbs. gross trailer weight.		
B. The pintle hook shall include a secondary cable tethered safety pin with a double wire tab lock. A cotter pin and chain shall not be an acceptable secondary lock pin arrangement.		
C. A ½" thick by at least 36" wide formed steel plate, full width of chassis frame rails, with a 3" return flange at the bottom shall be bolted to the chassis frame.		
D. Bottom and side support gussets shall be included.		
E. Two (2) swivel ¾" cold rolled steel "D" loops, 3" i.d. shall be attached to the bottom flange.		
F. Properly sized grade 8 bolts shall be used throughout the installation.		
G. The pintle hook height shall be 26" from ground to center of hook.		
H. A non-metallic weatherproof seven (7) pole round pin trailer socket shall be mounted through the hook plate on the upper left side of the pintle hook and OEM wired to the chassis as outlined in Specifications: 7PTC. Exact location shall be determined by contacting the NJTA Inspector prior to mounting.		
I. The pintle hook shall be attached to the frame plate with grade 8 bolts in accordance to the manufacturer's specification.		
J. An electronic brake controller in addition to the ABS brake controller shall be cab mounted and wired into the seven (7) wire plug as per Specifications: 7PTC. Exact location shall be determined by contacting the NJTA Inspector prior to mounting.		
K. Complete ABS air brake trailer system including a hand valve control and trailer protection valve shall be installed with the exception of the Glad Hands. The Glad Hand outlets on the pintle plate (location to be determined by the Authority) shall be plugged to prevent air leakage (<u>swivel</u> glad hands 45° cast iron, ⅜" port size, 180° rotation). The Glad Hands shall be installed at a location determined by contacting the NJTA Inspector prior to installation.		
CAB:		
A. Conventional galvanized steel cab.		
B. Hood shall be a 3-piece design with stationary bright finished grille.		
C. Odometer shall display miles, trip miles, engine hours, trip hours, and engine/vehicle system codes.		
D. Included shall be cab rear air bag suspension.		
E. All glass shall be tinted.		
F. Body builder "knockout" shall be provided in cab floor for body builder connections.		
G. Air operated, high-back vinyl driver seat with headrest and lumbar support and inboard armrest.		
H. High-back vinyl non-suspended passenger seat with headrest.		

I. 3-Point seatbelts with automatic retractors.		
J. Overhead console with radio pocket wired as described in Paragraph T of Electrical Section.		
K. Include shall be front storage pockets.		
L. Dome light, left and right interior courtesy lights shall be mounted on door pockets. Lights shall activate when doors are opened.		
M. Dual sun visors.		
N. In-dash cup holder.		
O. Driver's door storage pocket.		
P. Interior grab handles on both sides.		
Q. Chrome exterior grab handle with rubber insert-drivers side of cab.		
R. Exterior mirrors shall be approximately 16" x 7" with break-away style "C" stainless steel brackets and convex mirrors. A look down 6" x 10" panoramic mirror shall be mounted above passenger door. Both primary mirrors shall be motorized and controlled by a switch located in cab within easy reach of the driver. Primary and convex mirrors shall be thermostatically heated.		
S. HVAC system shall include heater/defroster/air conditioning. Air conditioning system shall have self-diagnostic features with dash displayed fault codes.		
T. Standard instrumentation packages shall be included with plug in type gauges.		
U. Hood wheel well rubber fender extensions shall not be acceptable.		
MISCELLANEOUS:		
A. Provided in cab shall be a dry chemical 5 lb. "UL" listed fire extinguisher suitable for ABC class fires. A quick-release type metal bracket shall be used to mount extinguisher to base of control panel pedestal. Note: Holes shall not be drilled into pedestal to mount quick-release bracket due to wiring running through pedestal. Wires passing through floor at bottom of pedestal must be neatly and uniformly filled with silicone.		
B. Provide a D.O.T. approved reflective triangle kit in cab.		
PAINT:		
A. All metal parts shall have the mill scale and oil removed by means of a high-pressure chemical cleaner prior to painting.		
B. All frame and running gear shall be painted manufacturers black.		
C. The top of the hood shall be painted non-reflective flat black.		
D. The other sections of the cab shall be painted with DuPont Dulux Omaha Orange Enamel # 93-082 or approved equivalent. Paint shall be applied in a two-step process with the orange base coat and additional polyurethane overcoat.		
E. Wheels, bumper, battery box (not battery cover), frame, and engine oil pan shall be powder coat painted.		
DIAGNOSTIC, REPAIR & PARTS:		

A. The awarded vendor shall provide a three (3) year manufacturers Web-based diagnostic, repair, and parts subscription including truck chassis and engine.		
B. Diagnostic and repair information for transmission, air-brake system, and other installed components shall be Web-based or PC based software.		
C. Eighteen (18) complete sets of factory diagnostic and repair vehicle interface software, to include all necessary cabling and connections for a laptop computer or a hand held device shall be supplied.		
MANUALS:		
A. Detailed schematic and description of all body hydraulics, electrical, and other components not installed by chassis manufacturer shall be provided. Twenty-three (23) of each of the following manuals in either paper form or computer disc shall be supplied upon delivery: Operation, Repair, Maintenance, Parts, and Electrical.		
AUTOMOTIVE TECHNICIAN TRAINING:		
A. The awarded vendor shall provide accredited authorized manufacturer new model training on the vehicles listed in this bid package. Thirty two (32) hours of training per technician shall take place at two (2) designated Authority facilities for approximately fifty (50) technicians at each facility.		

SPECIFICATIONS: DB-2014
SEVEN (7) CUBIC YARD STAINLESS STEEL DUMP BODY

BIDDER'S INSTRUCTIONS

IT SHALL BE THE BIDDER'S RESPONSIBILITY TO CAREFULLY EXAMINE EACH ITEM OF THE SPECIFICATION. BIDDERS MUST INDICATE WHETHER THEY COMPLY OR NON-COMPLY FOR EACH LINE ITEM IN THE SPECIFICATION. FAILURE TO PROVIDE A COMPLETED BID MAY CAUSE REJECTION OF BID. ALL NON-COMPLY RESPONSES AND/OR BIDDERS PROPOSED "APPROVED EQUIVALENTS" MUST BE FULLY EXPLAINED ON EXCEPTION FORM, NOTING SECTION AND ITEM. FAILURE TO EXPLAIN NON-COMPLY RESPONSES OR FAILURE TO SUPPLY DETAILED LITERATURE/BROCHURES ON THE BIDDERS PROPOSED "APPROVED EQUIVALENTS" MAY CAUSE REJECTION OF BID. WHERE "MINIMUM/MAXIMUM" IS SPECIFIED, BIDDERS MUST PROPOSE AT LEAST THE MINIMUM/MAXIMUM SIZES OR THE BID MAY BE REJECTED.

GENERAL:	**COMPLY YES**	**NO**
A. Seven (7) cubic yard minimum 201 stainless steel dump body.		
B. All component installation shall conform to the latest recommendation, procedures, and regulations of the following organizations: ASME, ASTM, AISI, API, AWS, DOT, FPS, ICC, JIC, MSS, NFPA, NEMA, NTEA, SAE, TTMA, and USASI.		
C. Dump body and hoist shall be of the latest design. Body and hoist shall be installed by an installer approved by the manufacturer of said components.		
D. Dump body and hoist shall be sized to provide proper load lifting capacity based upon size of each component in relationship to overall size of equipment specified.		
E. All components and installation shall be reviewed and approved in writing by the awarded vendors engineering department and shall be given to the NJTA Inspector at the pilot model inspection.		
F. Solid weld construction shall be used throughout unless otherwise specified.		
BODY DIMENSIONS:		
A. The following dimensions shall be considered minimums: Length……120" Rear Post.....42" Width (max)……..96" Tailgate Height……..42" Side Height……...36" Cab Shield.....None		
BODY CONSTRUCTION:		
A. The body shall be constructed of no less than10-gauge 201 stainless steel.		

B. The floor shall be one-piece with a minimum of ¼" thick abrasive resistant Hardox 450 or approved equivalent high carbon steel with a built in 2" side to floor radius.		
C. Body shall have one (1) decal mounted on the passenger side lower front corner post and one (1) decal mounted on the driver's side lower front corner post stating **"HARDOX IN MY BODY".** Decals shall be 5" wide x 5" long with white background and black 1½" high lettering.		
D. The under structure long members shall be a minimum of 8" I beam, 13 lbs./ft. steel, long member selection and body structure must be adequately capable of supporting an elevated load while driving.		
E. The bottom side rails, dirt shedder, and top rails shall be one-piece full length construction.		
F. The front and rear corner posts shall be solid weld construction.		
G. The formed "V" horizontal side brace shall be centered between the top rail and bottom rail and run from the rear corner post to the front corner post.		
H. The corner posts shall have 8" sideboard holders.		
I. The sideboards shall be made of full length 8" x 2" solid oak and be sealed, primed, and painted the same color as the cab of the truck. The boards shall be bolted in place through the board holders (front & back).		
J. The front corner posts shall be a minimum of 10-gauge, 6" wide and 3¾" deep.		
K. The front posts shall extend from the top of the rub rail to the top rail.		
L. The rearward side of corner post shall be at a 90° angle to allow welding.		
M. The front side of post shall be even with the head sheet.		
N. The rear corner posts shall be 7-gauge and a minimum of 12" x 5".		
O. The bulkhead shall be one-piece construction 7-gauge, properly reinforced with top edge at cab roof height.		
TAILGATE:		
A. The tailgate shall have one (1) centered horizontal brace within a boxed frame with inverted angle dirt shedder on the top brace.		
B. The two (2) horizontal braces shall be dirt shedding on both top and bottom.		
C. A full-length latch pin shall be inserted.		
D. Tailgate chains shall be a minimum of ⅜" high sheen, clevis removable and covered with nylon mesh.		
E. Greaseable top pins shall be 1¼" diameter standard style and include a .125" retention chain.		
F. Banjo plates shall be a minimum of ⅝" thick, two (2) per side.		
G. Two (2) inverted "J" hooks shall be permanently attached to the center section through stripe plate directly to tailgate horizontal brace evenly spaced at ⅓ increments to accommodate tarp ties.		
H. Stainless top hardware shall be tarp friendly style.		
I. Bolt-on type hardware and pins shall not be acceptable.		
J. In each lower corner of the tailgate shall be a yellow caution label (3" x 6") that reads in ¾" high black letters **"STAY CLEAR OF TAILGATE".**		

WALK RAIL:		
A. Stainless steel grip-strut one-piece full length both sides. Walk rail shall be on both bottom rail and intermediate horizontal bracing. Gussets for support of walk rail shall be every 12" or less and evenly spaced.		
TARP:		
A. Vinyl tarp shall be able to attach to dump body.		
B. The tarp system shall be sized to completely cover a loaded heaped dump body.		
C. Brass eyes shall be fitted onto tarp every 24".		
D. Rubber tarp ties and hooks shall be supplied for each brass eye on tarp.		
REAR FLAPS:		
A. Neoprene anti-sail, anti-splash bolted to a permanent stainless steel mount 3/16" x proper width bracket.		
B. Bracket and flap shall be sized and mounted so not to exceed 22° Federal Regulation.		
MUD GUARDS:		
A. 3/16", 201 stainless steel of proper size permanently attached in front of rear wheels, equidistant from front of tire as rear flap is of rear of tire.		
GRAB HANDLES:		
A. Two (2) ¾" diameter stainless steel grab handles shall be the full vertical height of the dump body excluding the side board, weld mounted and spaced parallel 17" apart in relationship to the ladder.		
LADDERS: (Slide-in type)		
A. There shall be two (2) 3" deep, 17" wide, and 26" long stainless steel slide-in type ladders with tread grip rungs mounted to the underside of the body, one (1) on each side at the forward most position of the body, centered directly under and in line with the grab handles.		
B. Stainless steel slide-in type ladder stowage shall be weld mounted directly to the underside of the body and shall have a spring loaded locking mechanism to securely store the ladder while in transit.		
C. Down position of ladders shall be as close as possible to the vertical line of the body as possible without interfering or contacting any other apparatus on the vehicle.		
DUMP BODY AMBER WARNING LIGHTS:		
A. Located at the rear facing corners of the dump body without interfering with DOT lighting requirements shall be four (4) light heads installed, two (2) on each side of body corner posts at ⅓ increments of the overall corner post height. Each mounting shall be recessed in a shock resistant grommet and each light head shall have a 3½" pigtail with weatherproof plug connector treated with dielectric grease.		

B. Amber LED light heads shall be a minimum of 12 square inch oval type with hard coated lenses and shall be SAE J595 compliant and meet or exceed **Type 1** candela output:

Type 1	20° L	10° L	V	10° R	20° R
5° U	117	191	844	191	117
H	270	421	2400	421	270
5° D	117	191	844	191	117

Chart Key—The preceding graph (Type 1) represents the minimal acceptable direct and off angle candela values, L-Left, R-Right, U-Up, D-Down, V-Vertical, H-horizontal and °-Degree.

C. Light heads shall display diagonally synchronized double flash signals.

D. The harness wiring shall be routed to prevent damage, terminate at each light head with a weatherproof socket connector treated with dielectric grease and originate in the cab at the multiplex interface. No other splicing or connections shall be acceptable.

E. A latched "Rear Amber Warning Lights" switch shall be incorporated with the chassis multiplexed switch panel and shall include the following features:

- Shall be back-lit labeled: **Rear Flasher.**
- Shall have a green "On" indicator light.
- Must be depressed to operate.

F. The Rear Amber Warning Light system shall also include the following features:

- All system wiring shall be multiplex interfaced.
- All system functional features shall be controlled by programmable ladder logic.
- A circuit failure within the rear amber warning light system layout shall flash the amber on indicator in the Rear Flasher switch.

DUMP BODY LIGHTS:

A. Two (2) 4" round red LED lights shall be rubber grommet mounted in the upper portion of the tailgate (one on each side). Exact location shall be determined by contacting the NJTA Inspector prior to installation.

B. All required LED marker lights shall be rubber grommet mounted and conform to DOT requirements in color, reflectivity, and placement.

C. All wiring junction connections shall be contained in a high-impact weatherproof plastic junction box, bracket mounted to the inside of the rear most chassis cross member.

D. All harness wiring shall be routed to prevent damage, terminate at each light head with a weatherproof plug connector treated with dielectric grease and originate at the above stated rear mounted junction box. No other splicing or connections shall be acceptable.

TAILGATE CONTROL:		
A. Tailgate shall have air-operated lower tailgate lock release.		
B. A latched tailgate release switch shall be incorporated with the chassis multiplexed switch panel and shall include the following features: • Shall be back-lit labeled: Tailgate. • Shall have a green "On" indicator light. • Must be depressed to operate. • Shall not operate unless the truck is in neutral and the parking brake is set.		
C. The tailgate release system shall also include the following features: • All system wiring shall be multiplex interfaced. • All system functional features shall be controlled by programmable ladder logic. • A circuit failure within the tailgate release system layout shall flash the green on indicator in the tailgate release switch.		
D. Air operation shall occur with one (1) pancake style (air open-spring closed) air chamber mounted on inside of body's rear apron, centered from side to side.		
E. All linkage and latch components shall be stainless steel.		
F. A minimum of 1" stainless steel cross rod shall be provided at rear of body and include stainless steel bushings with grease fittings.		
G. Control rods shall be attached to rear latches via connecting links and include locking adjustments.		
H. Connecting links shall be routed through rear long sill.		
I. All grease fittings throughout construction shall include dust covers.		
SPILL PLATES:		
A. 10-gauge stainless steel spill plates shall be bolted to the inside of the tailgate.		
B. Spill plates shall be from top to just above floor/side radius and wide enough to seal off material flow when tailgate is resting against spreader spill plate. A rear bolt-on stainless steel apron shall be provided.		
CONSPICUITY ENHANCEMENT:		
A. Each dump body rubrail and rear shall include 2" wide conspicuity enhancement.		
B. The enhancement shall be alternating red and white stripes.		
C. Enhancement shall provide reflection even in daylight hours.		
D. Conspicuity tape shall have twelve (12) different patterns of micro-prisms for maximum visibility.		
E. The reflective system shall be impervious to ultra violet radiation via internal pigmentation with acrylic layer protection.		
F. Conspicuity tape shall withstand all weather conditions and repeated washing and meet all FMVSS 108 requirements.		

G. 1" wide stripes shall be provided on each tarp rail.		
HOIST:		
A. Body and hoist shall be compatible in design, build, and installation.		
B. NTEA rated and certified type V, minimum of a class 50 rating.		
C. Unit shall be a double acting, under body subframe type.		
D. All pivot points shall provide free movement throughout expected life cycle (minimum 10 years) of subframe.		
E. All bolts throughout the hoist assembly shall be Grade 8 and require nylon lock nuts.		
F. The upper lift arms shall be grade 4140 box frame with 1½" pins.		
G. Sub frame of hoist shall be adequately capable of supporting an elevated load while driving and shall have one (1) body prop.		
H. Rear hinge shall be included in hoist frame.		
I. If applicable, zerks must not interfere with full dumping angle of body and have dust caps.		
J. Four (4) pairs of shop service body wedge style props shall be supplied with this bid package to facilitate body lift cylinder removal.		
CYLINDER:		
A. Double acting stage with internal poppet with field replaceable rod packing design with (1) 8" cylinder with at least 17" of stroke utilizing 2½" nitride piston rod.		
B. Piston rod with stroke to provide a minimum dumping angle of 50°.		

SPECIFICATIONS: CHS-2014
CENTRAL HYDRAULIC SYSTEM

BIDDER'S INSTRUCTIONS

IT SHALL BE THE BIDDER'S RESPONSIBILITY TO CAREFULLY EXAMINE EACH ITEM OF THE SPECIFICATION. BIDDERS MUST INDICATE WHETHER THEY COMPLY OR NON-COMPLY FOR EACH LINE ITEM IN THE SPECIFICATION. FAILURE TO PROVIDE A COMPLETED BID MAY CAUSE REJECTION OF BID. ALL NON-COMPLY RESPONSES AND/OR BIDDERS PROPOSED "APPROVED EQUIVALENTS" MUST BE FULLY EXPLAINED ON EXCEPTION FORM, NOTING SECTION AND ITEM. FAILURE TO EXPLAIN NON-COMPLY RESPONSES OR FAILURE TO SUPPLY DETAILED LITERATURE/BROCHURES ON THE BIDDERS PROPOSED "APPROVED EQUIVALENTS" MAY CAUSE REJECTION OF BID. WHERE "MINIMUM/MAXIMUM" IS SPECIFIED, BIDDERS MUST PROPOSE AT LEAST THE MINIMUM/MAXIMUM SIZES OR THE BID MAY BE REJECTED.

GENERAL:	**COMPLY YES**	**NO**
A. The system shall provide hydraulic fluid to operate the dump body hoist cylinders, snow plow hydraulic cylinders, and hydraulically operated material spreader.		
B. The hydraulic system shall be capable of running three (3) or more hydraulic functions simultaneously without inhibiting the action of the other.		
C. Fluid loss protection system shall be accomplished by means of a level sensor in hydraulic tank.		
D. The complete hydraulic system including cylinders, motors, fittings, valves, hoses, etc. shall conform to the highest quality of commercial hydraulic installation standards of the following organizations: ASME, ASTM, AISI, API, FPS, ICC, ISO, JIC, MISS, NFPA, NEMA, SAE, and USASI.		
E. The hydraulic system pressure and flow requirements shall be compatible with the operating rpm ranges of the trucks engine.		
F. Bidder shall submit with bid, complete hydraulic schematic including all components with manufacturer's names and model numbers including operational specifications.		
G. The successful bidder shall be responsible to demonstrate at the NJTA facilities the complete functional and performance capabilities of the hydraulic system and all affected components.		
HYDRAULIC PUMP AND PTO:		
A. The hydraulic pump shall be an axial piston pressure and flow compensated load-sensing type.		

B. The pump shall have a displacement of no less than 4 cubic inches per revolution at maximum stroke to deliver no less than 20 gpm @ 1000 engine rpm.		
C. The pump shall have a minimum 1½" suction line and a minimum ½" control drain line plumbed directly back to the reservoir.		
D. The pump shall be rated for no less than 3,600 psi and no less than 3,000 psi continuous.		
E. A Chelsea 277 series or approved equivalent hot shift PTO shall be mounted to the transmission shall drive the pump.		
SHUT DOWN SYSTEM:		
A. The shutdown feature is intended to protect the PTO pump from running dry or overheating in the event of a leak causing the hydraulic oil level to fall below a safe operating level and/or hydraulic oil temperatures rise above safe operating limits.		
B. The system shall have a float level sensor and temperature sensor.		
C. The system shall be designed so that when the float contacts open the PTO will disengage and stop pump operation.		
D. The system shall be designed so that prior to the hydraulic oil temperature reaching a critical temperature the PTO shall disengage and stop pump operation.		
E. A single "Oil Level" annunciator shall be incorporated with the chassis multiplexed switch panel and shall include the following features: • Shall be red in color when illuminated. • Shall be back-lit labeled: **Oil Level**. • Shall illuminate steady when the hydraulic reservoir float level indicates low oil.		
F. A single "High Temp" annunciator shall be incorporated with the chassis multiplexed switch panel and shall include the following features: • Shall be red in color when illuminated. • Shall be back-lit labeled **High Temp**. • Shall illuminate steady when the hydraulic oil temperature sensor indicates higher than acceptable oil temperature.		
G. The shutdown system feature system shall also include the following features: • All system wiring shall be multiplexed interfaced. • All system functional features shall be controlled by programmable ladder logic. • An open circuit failure within the shutdown system feature wiring layout shall illuminate the red indicators and render the hydraulic system inoperative.		
H. Located in the manifold enclosure shall be an override switch wired to de-energize the shutdown system to facilitate diagnostics and equipment storage.		

RESERVOIR/ VALVE ENCLOSURE:		
A. The hydraulic reservoir shall be of sufficient capacity to provide the required hydraulic fluid reserve and cooling capacities.		
B. The hydraulic reservoir shall be constructed of at least 10-gauge stainless steel and be internally baffled.		
C. Mounting bracket shall be designed and supplied by the reservoir supplier.		
D. Mounting system should allow for a 1" frame clearance for frame obstructions.		
E. Tank shall be mounted in a manner as to not transmit any truck torsional loads through the tank.		
F. The enclosure shall completely cover valves and components. Installation of permanent weather-striping shall be provided where necessary to eliminate moisture/debris from entering valve area and to reduce metal to metal vibration and noise.		
G. The enclosure lid shall be removable by one person without the use of tools.		
H. All valve fittings, hose ends, filter, filler breather, sending units, and any electrical connections shall be protected by enclosure cover.		
I. The hydraulic pressure gauge shall be located in the protective enclosure.		
J. The reservoir supplier shall provide all valve fittings (JIC connections) and plumb the return line from the valve to the filter.		
K. The cover shall protect from both road and pressure washer spray.		
L. The directional control valve must be easily accessible from all six (6) sides without the use of tools.		
M. Hose exit and entrance shall allow for components to be mounted adjacent to the enclosure.		
N. A 2" full flow brass ball valve shall be plumbed at the suction port of the tank and safety wired in the “open” position.		
O. A low oil/high temperature sending unit shall be mounted in the reservoir (wiring to the sensor on the reservoir shall be silicone sealed preventing water intrusion) and include a dash mounted OEM integrated and labeled warning light.		
FILTER:		
A. Hydraulic oil filter shall be mounted in the reservoir.		
B. Hydraulic filter shall be a 16-micron absolute and rated for no less than 60 gpm.		
C. The filtering system shall incorporate an electric clogging indicator switch that shall illuminate a red dash mounted OEM integrated warning light labeled “Filter Fault” when the filter has become restricted.		
HYDRAULIC CONTROL VALVE:		
A. The hydraulic valve shall be of modular manifold design.		
B. Each hydraulic function shall require an individual manifold stacked together to form the manifold base.		

C. The manifold base shall consist of an inlet section with inlet porting, outlet porting, and load sense porting.		
D. There shall be a main system relief in the inlet section to protect the system from high pressure in case the pump compensator fails.		
E. The dump body manifold shall be stacked next to the inlet section, and capable of 40 gpm with porting.		
F. The hydraulic control valves shall be pulse-width modulated and proportionally controlled.		
G. Each hydraulic valve segment may be individually mounted to the manifold base assembly and be serviceable without removing any hydraulic hoses or any other hydraulic valve segments.		
H. All segments shall have heavy-duty continuous duty coils. Connectors shall have LED diagnostic indicators.		
I. All coils shall operate at 12 VDC and require a maximum of 1,400 mille-amps.		
J. Each segment shall be equipped with a manual override.		
K. The dump body segment shall be rated a minimum of 40 gpm with all other segments rated at a minimum of 20 gpm.		
L. If a double acting hoist is utilized, the dump body segment shall be equipped with a down side relief to protect the body down function. This relief shall be set to the hoist manufacturer's specifications.		
M. The valves shall be arranged as follows from left to right: • Spinner…….2-way • Auger……...4-way for reversing auger • Plow Angle……..4-way • Plow Lift…….4-way • Plow Counterbalance • Hoist……...4-way with 500 psi down side work port relief valve		
N. A laminated schematic of **all** hydraulic valves and **all** electric circuits shall be attached to the inside of the valve enclosure cover.		
CONTROL:		
A. The control center must be an integral center for controlling all hydraulic functions including all automated salt controls.		
B. The center must have changeable nomenclature and be fully backlit with solid state LED's.		
C. The unit must be ground speed oriented and OEM incorporated (splicing connections shall not be acceptable) valve control connection, and main power OEM incorporated connection.		
D. Four (4) solid-state warning lights illuminated in red for: oil level, high temp, bed up, and filter fault shall be OEM incorporated and installed into dash.		
E. The center must also be supplied with color-coded wiring throughout.		

VALVE CONTROLS:		
A. The valve control in the control center for dump body shall be a fully proportional pulse width modulating controller with spring return to neutral and center safety lock.		
B. The valve control in the control center for snow plow shall be dual axis spring return to neutral center safety lock for plow raise/lower and plow angle.		
SPREADER CONTROL CONSOLE:		
A. The electronic spreader control shall be designed for precise open loop control of granular material.		
B. The spreader control shall regulate the auger and spinner speeds.		
C. There shall be two (2) individual detented knobs providing proportional control from closed to fully open on the control valve of the auger and spinner.		
D. Front face panel shall have blast and standby mode.		
E. The unit must be protected from reverse polarity as well as over-voltage protected.		
F. The unit must provide operational modes for manual or open loop (ground speed only).		
HYDRAULIC LINES AND PLUMBING:		
A. All hydraulic lines and plumbing shall be of sufficient capacity so as not to create heat or turbulence within hydraulic system.		
B. Suction line between reservoir and pump shall be a minimum of 1½" i.d. with a minimum SAE 100-R4 rating and shall be secured on both ends via heavy duty banding straps.		
C. All pressure hoses, including signal sense to pump shall have swivel fittings on both ends and have a minimum SAE 100-R2 rating.		
D. All hydraulic hoses shall be installed with the appropriate fittings, where necessary to alleviate sharp hose angles.		
E. Truck mounted bulk head coupling assemblies shall be plate mounted to receive each function group, (plow reversing, auger, and spinner). The inlet and outlet for each function group shall be paired side by side. The auger and spinner supply couple shall be the male type and the return shall be the female type. The plow left couple shall be male type and the plow right couple shall be female type. The location of each function group mounting shall be adjacent to the associated equipment, (plow-centered horizontal mount in the plow frame vehicle front, auger-right side vehicle rear vertical mount behind body apron and spinner-left side vehicle rear vertical mount behind body apron). All couplings shall be brass and have lanyard attached rubber cap/plug covers.		
F. Return lines and case drain shall have minimum SAE 100-R1 rating.		
G. Hydraulic lines shall be routed to minimize interference with equipment and chassis components requiring periodic servicing.		

H. Support brackets shall be provided where appropriate to protect lines from damage by abrasion, cutting or impact.		
I. Hoses shall not be routed near exhaust manifolds pipes, bolts, sharp edges, and exhaust system to prevent wear, fatigue, or fire.		
J. Pipe fittings are not acceptable in any high-pressure line.		
K. Maximum distance between support clamps on all hydraulic lines shall be 12". Plastic ties shall not be acceptable.		
L. Hydraulic hose abrasion protection shall be used, a sleeve or coil wrap, where needed. Plastic wire loom shall not be acceptable.		
PLOW COUNTERBALANCE VALVE FEATURE:		
A. The counterbalance valve shall divert some of the plows weight off of the blade and onto the front of the truck by applying a percentage of hydraulic pressure to the plow hoist.		
B. The valve shall work by supplying pressure to the lift cylinder to partially lift the plow. • The counter balance valve lift pressure shall be capable of manual adjustment in the field. • Oil flowing in and out of the lift port shall be restricted with an orifice to control the speed of operation. • The counter balance on and off functionality shall be controlled by electrical solenoids and a latched switch.		
C. A latched “Plow Valve” switch shall be incorporated with the chassis multiplexed switch panel and shall be incorporated within the counter balance electrical circuit: • Shall be back-lit and labeled: **Plow Valve**. • Shall have a green “on” indicator light. • Must be depressed to operate.		
D. The Plow Counter Balance feature system shall also include the following features: • All system wiring shall be multiplexed interfaced. • All system functional features shall be controlled by programmable ladder logic. • An open circuit failure within the plow counter balance valve feature wiring layout shall flash the green on indicator in the Plow Valve latched switch and render the plow counter balance valve function inoperative.		
BODY HOIST RAISE LIMIT FEATURE:		
A. The body hoist raise function shall be normally limited to a predetermined height within an adjustable range and shall include a momentary limit override switch with incremental annunciated visual and audible indicators.		

B. A normally closed inductive proximity switch shall be incorporated within the hoist up electrical circuit and the chassis multiplexed body builder logic provision to control the body hoist height within an adjustable limit range from 10'2" to 13'6" maximum body height. • The inductive operating clearance shall be set in the middle of the receptive range; this clearance shall be maintained throughout the adjustable height settings without the need to reset the inductive clearance. • The proximity switch shall be field replaceable and include a weatherproof connector. • The switch shall function in a temperature range of between -40° to +170° F and withstand harsh environments.		
C. A momentary "Body Over Height" switch shall be incorporated with the chassis multiplexed switch panel and shall be incorporated within the hoist up electrical circuit to override the inductive proximity switch function and shall include the following features: • Back-lit labeled: **Body Ovrht.** • Amber "On" indicator light. • Must be depressed to operate. • Shall not operate while the vehicle is in gear.		
D. A single "Body Up" annunciator shall be incorporated with the chassis multiplexed switch panel and shall include the following features: • Red in color when illuminated. • Back-lit labeled: **Body Up.** • Illuminate steady when the dump body is in the raised position. • Illuminate in slow pulse flashes when the dump body reaches the limit height. • Illuminate in fast pulse flashes when the dump body is past the limit height.		
E. A dash cluster audible alarm shall include the following features: • Steady sound when the dump body is past the limit height with the parking brake released. • No sound if the unit is in neutral when the dump body is past the limit height.		
F. The body hoist raise limit feature system shall also include the following features: • All system wiring shall be multiplexed interfaced. • All system functional features shall be controlled by programmable ladder logic. • An open circuit failure within the body hoist raise limit feature wiring layout shall flash the amber on indicator in the **"Body Ovrht"** momentary switch and render the body hoist raise function inoperative.		

SPREADER CONTROL SYSTEM:		
A. The spreader control system shall be an open loop automatic ground speed oriented with manual control capability.		
B. The spreader shall function in the automatic mode directly relating vehicle speed to a variable preset amount of material so that regardless of the vehicle forward or reverse speed the preset pounds of material per linear mile shall not vary.		
C. The speed sensor shall be an inline frequency type.		
D. The electric control panel shall be capable of interpreting electronic speedometer signals; either proximity type, AC type or Hall Effect type.		
E. The blast mode shall function in the manual or auto mode.		
F. The system shall return to the manual or auto preset rate upon deactivation of the blast mode.		
G. The blast mode shall only affect the auger speed. The spinner-spread pattern shall not change in the blast mode.		
SPREAD CONTROL PANEL & HARNESS:		
A. The control panel shall be self-contained and sized for pedestal mounting (between driver and passenger seat).		
B. All switches shall be back-lit illuminated, permanently labeled, color-coded, and located in the panel for the safest possible operation.		
C. A momentary "Auger Reverse" switch shall be incorporated with the chassis multiplexed switch panel and shall be incorporated within the auger electrical circuit: • Shall be back-lit labeled: **Auger Rev**. • Shall have a green "On" indicator light. • Must be depressed to operate. • The spinner shall stop when the auger is reversed.		
D. The auger reverse feature system shall also include the following features: • All system wiring shall be multiplexed interfaced. • All system functional features shall be controlled by programmable ladder logic. • An open circuit failure within the auger reverse feature wiring layout shall flash the green on indicator in the auger reverse momentary switch and render the auger reverse function inoperative.		
E. The spreader control shall include a minimum nine (9) position dial control for auger, a minimum nine (9) position dial for control spinner, blast button, and spreader auto/manual and on/off.		
F. The control shall contain adjustments for minimum and maximum of each auger and spinner circuit and complete PWM frequency tuning.		
G. The spreader circuit shall have a common connection.		
H. The spreader control shall operate in either a manual or automatic mode and function with a manual or electronic speedometer.		
I. All speed rates shall be programmed externally but coded to prevent unauthorized adjustments.		

J. The spreader blast function shall be externally adjustable from 0-10 seconds after the button is released (set for 10 seconds).		
K. All control circuits shall be fused and shall be suppressed.		
L. The wiring harnesses must be tested before installation.		
M. The wire harnesses shall be resistant to oil and abrasion.		
JOYSTICKS FOR PLOW & BODY FUNCTIONS:		
A. The operator's control panel shall incorporate two (2) separate electrical joysticks.		
B. The dual joysticks shall be remotely mounted to right side of operator's seat in an accessible position to ensure easy operator control (exact location, height, and angle shall be determined by contacting the NJTA Inspector prior to installation).		
C. The joystick for plowing functions shall be of the rocker grip type. The joysticks for the body and plow functions shall both contain a dead man switch capable of de-energizing the body hydraulics upon handle release.		
ANNUNCIATOR PANEL:		
A. An annunciator panel shall be provided in the dash switch cluster.		
B. The panel shall have the following annunciators: • Low Salt-shall light when the spreader auger pressure switch indicates falling pressure in auger hydraulic circuit. • Oil Level -shall light when oil level in reservoir drops to an unsafe level. • Filter Fault-shall light when the hydraulic filter is clogged. • Bed Up-shall light when the dump body is in the raised position.		
C. Each annunciator incorporated with the chassis multiplexed switch panel shall include the following features: • Shall be Red in color when illuminated. • Shall be back-lit labeled. • Shall illuminate steady when in annunciated.		

SPECIFICATIONS: TS-2014
TAILGATE SPREADER

BIDDER'S INSTRUCTIONS

IT SHALL BE THE BIDDER'S RESPONSIBILITY TO CAREFULLY EXAMINE EACH ITEM OF THE SPECIFICATION. BIDDERS MUST INDICATE WHETHER THEY COMPLY OR NON-COMPLY FOR EACH LINE ITEM IN THE SPECIFICATION. FAILURE TO PROVIDE A COMPLETED BID MAY CAUSE REJECTION OF BID. ALL NON-COMPLY RESPONSES AND/OR BIDDERS PROPOSED "APPROVED EQUIVALENTS" MUST BE FULLY EXPLAINED ON EXCEPTION FORM, NOTING SECTION AND ITEM. FAILURE TO EXPLAIN NON-COMPLY RESPONSES OR FAILURE TO SUPPLY DETAILED LITERATURE/BROCHURES ON THE BIDDERS PROPOSED "APPROVED EQUIVALENTS" MAY CAUSE REJECTION OF BID. WHERE "MINIMUM/MAXIMUM" IS SPECIFIED, BIDDERS MUST PROPOSE AT LEAST THE MINIMUM/MAXIMUM SIZES OR THE BID MAY BE REJECTED.

GENERAL:	**COMPLY YES**	**NO**
A. Hydraulically operated, cab controlled under-the-tailgate type material spreader.		
B. The spreader shall not interfere in any manner with the normal operation and usage of the dump body, tailgate or pintle hook.		
C. Spreader shall have a single self-leveling spinner assembly that shall be mounted on the left side of the hopper.		
D. All bolts, pins and fasteners shall be high-quality stainless steel.		
E. The spreader shall be constructed of 304 stainless steel.		
SPREADER MOUNTING:		
A. The spreader shall be securely mounted to the sides of the dump body with quick-disconnect brackets and hanger bars.		
B. The hanger bars shall be attached to the sides of the dump body with special clevis pinned connections (John Deere # 230044-WNL) or approved equivalent and bolted to the spreader by means of ½" carriage bolts and self-locking nuts.		
C. Drilled bolts shall not be acceptable.		
D. Hanger bar holes shall be drilled on center 20" apart from each other.		
E. Holes shall be drilled in each side of the spreader box to allow for pick up hooks to ease lifting and mounting of the spreader.		
F. Holes shall be approximately ¾" in diameter and shall be drilled in each side panel of the spreader equidistantly to facilitate level installation.		
G. Holes and bolts shall in no way interfere with the normal operation or compromise the structural integrity of the spreader.		

H. Mounting shall provide for universal and adaptability on all trucks listed in this bid package.		
HOPPER:		
A. The hopper shall be constructed with 7-gauge stainless steel end plates.		
B. The end plates shall be continuously welded to a 10-gauge stainless steel trough.		
C. The hopper shall have a 10-gauge stainless steel three-point hinged bottom.		
D. With bottom of hopper opened, the entire length of the auger shall be exposed for cleaning.		
E. The hinged bottom shall be held in place by two (2) heavy-duty cam locks with a lift handle.		
F. The hopper shall have an anti-flow cover over the discharge opening.		
G. The cover shall be removable without tools.		
H. The hopper shall have 10-gauge stainless steel cover/back plate.		
I. The plate shall be a one-piece hinged integral part of the hopper and shall be raised when spreading and lowered when dumping.		
J. The cover plate shall be capable of being locked in either the raised or lowered position by two (2) simple captivated latches.		
K. The auger drive mechanism shall be protected by a stainless cover, which shall be hinged at two (2) points and secured by a single latch.		
L. The discharge port shall be located at the extreme street side end of hopper.		
M. There shall be no open gap between front edge of spreader hopper and the rear dump body sill.		
N. If a gap exists between the trough lip and the dump body rear cross-member, a ‘spill board’ of about 3/16" x 2" steel shall be welded to the forward lip of the spreader to form a seal.		
O. The spreader shall fit the truck body <u>exactly</u> (no gaps) in order to prevent salt seepage in any area other than the discharge port.		
P. Tailgate shields shall be provided to prevent material spillage at the ends of the spreader.		
Q. Hydraulic safety interlock arm shall require auger hose disconnection prior to opening bottom door or top cover. Auger disconnection coupling shall be brass and shall have lanyard attached rubber cap/plug covers.		
AUGER:		
A. The auger shall be a single 6" nominal interrupted flight type auger.		
B. The flights shall be designed, spaced, angularity positioned, and graduated to provide an accurate and equalized amount of material to the spinner.		
C. The flights shall be ⅜" thick and patterned in three (3) zones.		
D. The flights shall be continuously welded to a 2" schedule 40 ATSM pipe.		
E. The pipe shall be supported by two (2) 1¼" steel shaft ends.		
F. The auger bearings shall be precision grade, self-aligning, sealed, and dust-proof with lube fittings.		
G. Power shall be provided by a direct-coupled hydraulic motor.		

H. The hydraulic motor shall mount directly to the auger shaft by non-corrosive sleeve and a ½" stainless steel grade 5 bolt and a grade 5 stainless steel nylock nut.		
I. The motor shall be mounted to the hopper end plate.		
J. The auger shall rotate in a counter-clockwise direction as viewed from the left side of the truck.		
K. The motor shall be reversible.		
SPINNER ASSEMBLY:		
A. The spinner assembly shall consist of an 18" diameter disc and six (6) cupped vanes with a 4-bolt pattern formed into a single polyurethane unit, resulting in a flat trajectory and a uniform spreading pattern from 4' to 60'.		
B. The spinner assembly shall be mounted on the left side and shall be adjustable allowing for variable spreading patterns left, center or right.		
C. This shall be accomplished by sliding the hinged frame sideways on the shaft so the point where the material hits the spinner disc is varied.		
D. A stainless steel spinner shield shall be provided and installed to prevent material from striking the truck.		
E. A spinner guard shall be provided and installed.		
F. The guard shall consist of dual rings, upper and lower positioned to overlie the outer periphery of the spinner.		
G. The upper ring shall have an expanded metal cover attached.		
H. The guard shall attach directly to the spinner assembly.		
I. The spinner shall be directly driven by a reversible high-torque hydraulic motor that shall be capable of spreading 60' within the motors rated maximum rpm.		
J. The spinner motor shall be capable of rotating the spinner disc at a minimum of 1,000 rpm's at the highest spinner setting. **NO EXCEPTIONS**		
K. The spinner assembly shall be mounted to spreader by means of a quick-disconnect, stainless steel rod, clips, 'T' bolts for rapid removal and shall be to the outer side or behind the spinner disc or extend beyond the side of the dump truck.		
L. All necessary brackets and mounting supports shall be furnished.		
M. The spinner standard leveling mechanism shall have ¼" chain.		
N. The chain length shall be of such a length to keep the spinner level.		
O. The clearance of any spreader appendage to pavement with body raised to its maximum angle shall be 8".		
SPREADER LIGHT:		
A. The spreader light shall be used to illuminate the salt discharge from the spinner during salting operations as an indicator to the operator that salt is actually being dispensed as intended.		
B. One (1) Whelen # PFBS12 or approved equivalent, 12 diode, 1,000 lumens, 12v-1.70 amp stud/swivel mount white LED work light.		
C. The light assembly shall be positioned to illuminate the spreader operation.		

D. Wiring shall be “SO” two (2) conductor quick-disconnect weather pack connector and be impervious to weather and salt. Wires going into spinner light fixture shall be sealed with silicone.		
E. A latched “Spreader Light” switch shall be incorporated with the chassis multiplexed switch panel and shall include the following features: • Shall be back-lit labeled: **SPREDR LIGHT**. • Shall have a green “On” indicator light. • Must be depressed to operate.		
F. The Spreader Light system shall also include the following features: • All system wiring shall be multiplexed interfaced. • All system functional features shall be controlled by programmable ladder logic. • A circuit failure within the spreader light system layout shall flash the green on indicator in the spreader light switch.		
RATE OF APPLICATION:		
A. The spreader shall be capable of spreading salt at an operating range (rate) from 0-1275 lbs per mile divided between auger settings.		
SPREADER CONTROL:		
A. The operation of the spreader shall be controlled from the cab by the control console covered in the Central Hydraulic System Specifications.		
B. The spreader shall be controlled by an open loop automatic ground speed oriented system.		
C. The automatic spreader control system shall allow dispensing requirements of 100 lbs. per lane mile to 425 lbs. per lane mile and up to three (3) lanes at one time, independent of vehicle road speed.		
D. No hydraulic lines shall enter cab of truck.		
SPREAD PATTERN:		
A. The spreader, when operating at capacity, shall be able to spread 60', i.e., 30' either side of spinner disc.		
B. The spread pattern and rate shall be controlled in any range from 0 to maximum.		
C. The spreader shall be capable by means of a quick-change adjustment device on spinner assembly to apportion material on the spinner and spread material evenly: • Spread all to the left of truck nothing behind or to the right of truck. • Spread to the left and behind truck, nothing to right of truck. • Spread to the right and behind truck, nothing to left of truck.		
GREASE FITTINGS:		
A. Grease fittings shall be clearly indicated.		
B. If grease fittings are covered, directions by use of arrows or stenciled letters shall be given.		
C. Extensions shall be provided when grease fittings are not readily accessible.		

SPECIFICATIONS: LBS-2014
LIGHT BAR STANCHION

BIDDER'S INSTRUCTIONS

IT SHALL BE THE BIDDER'S RESPONSIBILITY TO CAREFULLY EXAMINE EACH ITEM OF THE SPECIFICATION. BIDDERS MUST INDICATE WHETHER THEY COMPLY OR NON-COMPLY FOR EACH LINE ITEM IN THE SPECIFICATION. FAILURE TO PROVIDE A COMPLETED BID MAY CAUSE REJECTION OF BID. ALL NON-COMPLY RESPONSES AND/OR BIDDERS PROPOSED "APPROVED EQUIVALENTS" MUST BE FULLY EXPLAINED ON EXCEPTION FORM, NOTING SECTION AND ITEM. FAILURE TO EXPLAIN NON-COMPLY RESPONSES OR FAILURE TO SUPPLY DETAILED LITERATURE/BROCHURES ON THE BIDDERS PROPOSED "APPROVED EQUIVALENTS" MAY CAUSE REJECTION OF BID. WHERE "MINIMUM/MAXIMUM" IS SPECIFIED, BIDDERS MUST PROPOSE AT LEAST THE MINIMUM/MAXIMUM SIZES OR THE BID MAY BE REJECTED.

LIGHT BAR STANCHION:	**COMPLY YES**	**NO**
A. Two (2) rotor light stanchion mounting bracket shall be fabricated as follows: • Bracket base shall be a minimum of 6" x ¼" rolled steel plate cold pressed to conform to the outside of the chassis frame in an inverted "L" shape, the base shall have two (2) 21/32" holes drilled in the vertical portion at evenly space intervals to match exiting chassis manufacturers holes. • The bracket upright shall be a minimum of 7" x 4" x ¼" rolled steel plate welded vertically and centered to the bracket base, the upright shall have three (3) 17/32" holes drilled in an evenly spaced triangular pattern to facilitate stanchion mounting.		
B. The rotor light stanchion mounting bracket assembly shall be cleaned, primed and shall have a black powder coat finish.		
C. Each rotor light stanchion base shall be mounted to the chassis frame through existing chassis manufacturer holes between the rear of the cab and the front of the dump body, using two (2) ⅝" grade 8 bolts, two (2) steel flat washers, and two (2) grade 8 nylon locking nuts.		
D. The rotor light stanchion structure shall be weld fabricated as follows: • Two (2) vertical upright posts shall be a minimum of 4" x 2" 10-gauge roll formed stainless steel C-channel set vertically (overall rotor light assembly shall be 1" higher than the cab roof). • Two (2) minimum of 3" x 1½" 10-gauge roll formed stainless steel C-channel cross braces shall be angularly weld mounted from left to right between the upright posts.		

E. A minimum of a 2" x 3/16" capped stainless steel tube crossbar shall be weld mounted and gusseted with a minimum of 3" x 1½" 10-gauge roll formed stainless steel C-channel weld mounted between crossbar and channel uprights. The crossbar shall be approximately 9½' wide but shall not be wider than the exterior mirrors.		
F. The crossbar shall have a minimum of 3/16" round stainless steel rotor light mounting plates at each end. The diameter of each plate shall be at least ¼" larger than the diameter of the rotor light base. The plates shall be weld mounted horizontally at the outer most edge without exceeding the width of the crossbar.		
G. Two (2) 12" long sections of ½" o.d. stainless steel tubing shall be weld mounted and evenly spaced along the crossbar and two (2) 12" long sections of ½" o.d. stainless steel tubing shall be weld mounted and evenly spaced along the left side vertical stanchion upright to facilitate rotator light wire routing.		
H. The rotor light stanchion shall be mounted to the rotor light stanchion mounting bracket using six (6) ½" grade 8 bolts, six (6) steel flat washers, and six (6) grade 8 nylon locking nuts.		
I. The rotor light stanchion assembly shall not interfere or have contact with the cab or the dump body and shall provide adequate strength with a minimum amount of vibration transference to the rotor lights.		

SPECIFICATIONS: RL-2014
ROTATOR LIGHTS

BIDDER'S INSTRUCTIONS

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ROTATOR LIGHTS:	**COMPLY YES**	**NO**
A. Class I Ecco Roto LED Beacon Model # 7660 rotator warning lights or approved equivalent.		
B. The Rotator Light system shall also include the following features: • All system wiring and switching shall be multiplex interfaced. • A latched Rotor Light switch shall be green back-lit and labeled **Light Bar.** • All system functional features shall be controlled by programmable ladder logic. • A circuit failure within the Rotator Light system layout shall flash the green on indicator in the Light Bar switch.		
C. All wiring shall be type "SO" cord and sized to sufficiently handle current demands of all lighting.		
D. The harness wiring shall be securely mounted and routed to prevent damage, originate in the cab at the multiplex interface and terminate at each rotator light with a weatherproof socket connector. No other splicing or connections shall be acceptable.		

SPECIFICATIONS: SPL-2014
SNOW PLOW LIGHTS

BIDDER'S INSTRUCTIONS

IT SHALL BE THE BIDDER'S RESPONSIBILITY TO CAREFULLY EXAMINE EACH ITEM OF THE SPECIFICATION. BIDDERS MUST INDICATE WHETHER THEY COMPLY OR NON-COMPLY FOR EACH LINE ITEM IN THE SPECIFICATION. FAILURE TO PROVIDE A COMPLETED BID MAY CAUSE REJECTION OF BID. ALL NON-COMPLY RESPONSES AND/OR BIDDERS PROPOSED "APPROVED EQUIVALENTS" MUST BE FULLY EXPLAINED ON EXCEPTION FORM, NOTING SECTION AND ITEM. FAILURE TO EXPLAIN NON-COMPLY RESPONSES OR FAILURE TO SUPPLY DETAILED LITERATURE/BROCHURES ON THE BIDDERS PROPOSED "APPROVED EQUIVALENTS" MAY CAUSE REJECTION OF BID. WHERE "MINIMUM/MAXIMUM" IS SPECIFIED, BIDDERS MUST PROPOSE AT LEAST THE MINIMUM/MAXIMUM SIZES OR THE BID MAY BE REJECTED.

GENERAL:	**COMPLY YES**	**NO**
A. Snow plow lights shall be used to add normal head light operation from a higher position on the cab facilitating light projection clearance above the attached snow plow.		
B. Snow plow lights shall be Meyer Saber Light Model # 07223 or approved equivalent.		
C. Snow plow lights shall provide an alternate high/low beam light source when snow plow is attached.		
D. Mounting shall be shock-proof and vibration resistant.		
E. A three point, 2" x .250" aluminum bracket system shall be provided to accommodate high profile snow plows.		
F. Lights shall include halogen bulbs, wrap around park/turn lamps.		
G. A latched "Plow Light" switch shall be incorporated with the chassis multiplexed switch panel and shall include the following features: • Shall be back-lit labeled: **Plow Light**. • Shall have a green "On" indicator light. • Must be depressed to operate. • While on, the OEM park, turn, high and low beam light switch operation shall operate the plow lights. • While on, the chassis headlights shall not operate. • Returning the switch to the off position shall return the chassis headlights back to normal operation.		
H. Power supply for these additional lights shall be from the existing chassis high/low beam, park and turn signal circuits.		

I. Plow light housing shall be of polycarbonate material.		
J. All wiring shall be routed to prevent damage (no splices) and be multiplexed interfaced and be attached at firewall to a seven (7) terminal connection point for ease of hook up and troubleshooting.		
K. There shall be **no** splices (must have continuous feed from lights to firewall).		
L. Mounting shall be on truck fenders/hood.		
M. Original chassis high beam dash mounted indicator shall function when plow lights are in high beam mode.		

SPECIFICATIONS: SPH-2014
SNOW PLOW HITCH

BIDDER'S INSTRUCTIONS

IT SHALL BE THE BIDDER'S RESPONSIBILITY TO CAREFULLY EXAMINE EACH ITEM OF THE SPECIFICATION. BIDDERS MUST INDICATE WHETHER THEY COMPLY OR NON-COMPLY FOR EACH LINE ITEM IN THE SPECIFICATION. FAILURE TO PROVIDE A COMPLETED BID MAY CAUSE REJECTION OF BID. ALL NON-COMPLY RESPONSES AND/OR BIDDERS PROPOSED "APPROVED EQUIVALENTS" MUST BE FULLY EXPLAINED ON EXCEPTION FORM, NOTING SECTION AND ITEM. FAILURE TO EXPLAIN NON-COMPLY RESPONSES OR FAILURE TO SUPPLY DETAILED LITERATURE/BROCHURES ON THE BIDDERS PROPOSED "APPROVED EQUIVALENTS" MAY CAUSE REJECTION OF BID. WHERE "MINIMUM/MAXIMUM" IS SPECIFIED, BIDDERS MUST PROPOSE AT LEAST THE MINIMUM/MAXIMUM SIZES OR THE BID MAY BE REJECTED.

GENERAL:	**COMPLY YES**	**NO**
A. Hitch shall be engineered, designed, and built by an industry recognized manufacturer.		
B. The hitch shall be designed for severe service and shall be a bumper to frame mounting on all heavy-duty conventional rear-wheel drive trucks.		
C. Hitch shall be designed to provide a minimum amount of front overhang.		
D. The low profile hitch design shall allow the cab hood to tilt fully forward a sufficient and safe amount to allow for proper engine access.		
E. The heavy-duty front frame hitch shall be designed to transmit plowing forces directly to the truck frame side rails with custom built side plates to fit the trucks specified in this bid package.		
FEATURES:		
A. The side plates are custom fitted ⅝" minimum steel plate of proper length and construction for heavy-duty service.		
B. The custom fitted side plates shall provide adequate clearance for steering mechanism and spring suspensions.		
C. The front section shall consist of the lifting frame, push plate, reinforcements, braces, and mounting brackets.		
D. The lifting frame vertical square structural steel tubing shall be a minimum of 4" x 4" x ⅜" and top angle shall be ½" x 4" x 3" and gusseted for extra strength.		
E. Lift arm extension storage brackets shall be provided on the right side lifting frame vertical using a minimum of two (2) 4" x 4" x .38 approximately 2½" long square structural steel tubing, pin provisions shall be made in the top storage bracket to secure the lift arm extension with the lift arm assembly 1" anodized steel pin and locking device.		

F. Ram support angle shall be a gusseted ½" x 4" x 6" angle with welded ½ " thick steel ram connection ears and so designed to accept a front bumper constructed of 8" @ 13.75# channel.		
G. The lower push plate main member is 10" @ 25 lb/ft. channel, reinforced with a ⅜" x 3" x 3" angle.		
H. The plow connecting ears shall have three (3) equally spaced height attaching holes fabricated from (2) ¾" bars capable of adjusting pin ground height to approximately 15", 18", and 21" center of mounting holes.		
I. Plow connection pins are 1¼" diameter-two (2) shall be supplied with chain retainers.		
J. Push centers shall match existing Authority snow plows with 21" center.		
K. The specified truck bumper shall be cut and attached to either side of hitch side plates and reinforced as required using custom made bolt-on plates for easy replacement. Welding shall not be acceptable.		
L. The top of the bumper and front of grille shall have a removable bustin type plate deck mounted, full width.		
M. The bumper shall have four (4) 5/16" holes drilled for placement of license plates on driver's side.		
N. The plow hoist cylinder shall be of premium grade and shall be a double acting ram of not less than 3" bore x 10" stroke with a 1.5" nitride piston rod.		
O. The cylinder shall be capable of 14,000 lbs. of thrust @ 2,000 psi and 16,000 lbs. of bursting pressure @ 2,000 psi.		
P. The plow hoist cylinder shall be secured to the lifting frame at the connection ears with a minimum of a 1" grade 8 bolt and nylock nut. The cylinder shall be attached to the lift beam at the connection ears with a minimum of a 1" anodized steel pin and locking clevis.		
FOLDING LIFT BEAM:		
A. The folding lift beam assembly consisting of two parts, an inner section or receiver and an outer section or extension arm.		
B. The inner section shall have two (2) pin ears of minimum ¾" plate steel attached to the lifting frame using a minimum of 1" grade 8 bolts and nylock nuts facilitating a vertical flat fold when not in use. The inner section shall have a minimum of ½" steel horizontal top gusset plate angle to allow for hood tilting and fully welded to a minimum of a 4" x 4" x .38 structural square steel tube.		
C. The underside of the inner section shall have welded ½" plate steel plow hoist cylinder connection ears.		
D. The outer section shall be 3" x 3" x .38 structural square steel tube capped at one (1) end with a minimum of ¾" steel plate extending outward and toward the truck. The outward extensions shall have one (1) banjo hole on each side providing attachment of two (2) plow lift chains.		
E. The outer section assembly shall slide in and out of the inner section receiver and be secured in the operating position with a minimum of a 1" anodized steel pin and locking clevis.		

F. The plow hitch shall be mounted as close to grille as possible.		
G. If frame length must be reduced, vendor shall remove portion of frame in such a way not to affect the integrity of frame strength.		
H. Tow hooks shall be mounted on hitch using original equipment from chassis manufacturer.		
PAINT:		
A. The hitch shall be painted with black enamel paint.		

SPECIFICATIONS: SP-2014
SNOW PLOW

BIDDER'S INSTRUCTIONS

IT SHALL BE THE BIDDER'S RESPONSIBILITY TO CAREFULLY EXAMINE EACH ITEM OF THE SPECIFICATION. BIDDERS MUST INDICATE WHETHER THEY COMPLY OR NON-COMPLY FOR EACH LINE ITEM IN THE SPECIFICATION. FAILURE TO PROVIDE A COMPLETED BID MAY CAUSE REJECTION OF BID. ALL NON-COMPLY RESPONSES AND/OR BIDDERS PROPOSED "APPROVED EQUIVALENTS" MUST BE FULLY EXPLAINED ON EXCEPTION FORM, NOTING SECTION AND ITEM. FAILURE TO EXPLAIN NON-COMPLY RESPONSES OR FAILURE TO SUPPLY DETAILED LITERATURE/BROCHURES ON THE BIDDERS PROPOSED "APPROVED EQUIVALENTS" MAY CAUSE REJECTION OF BID. WHERE "MINIMUM/MAXIMUM" IS SPECIFIED, BIDDERS MUST PROPOSE AT LEAST THE MINIMUM/MAXIMUM SIZES OR THE BID MAY BE REJECTED.

GENERAL:	**COMPLY YES**	**NO**
A. The snow plow shall be an 11' x 42" power reversible "J" style type.		
B. The snow plow shall be new and of the latest design and be in current production at the time of the submission of bid.		
C. All standard and optional equipment shall be Original Equipment Manufacturers (OEM) items, when available. **NO EXCEPTIONS.**		
D. Bidders **must** submit with their bid, detailed/technical specifications of their snow plow being bid.		
MOLDBOARD:		
A. The moldboard shall be 42" high and 132" long formed in a "J" shaped blade. The radius shall be approximately 20" and the last 12" a minimum of a 6" radius.		
B. The moldboard shall be constructed with a minimum of 7-gauge steel paneled for additional strength.		
C. The top shall be reinforced at the top by a self-formed channel and the bottom with a one piece 4" x 4" x ⅜" structural angle.		
D. The cutting edge banking plate of ⅝" x 3" steel shall be welded and braced with a ½" x 2½" gussets welded between each cutting edge bolt position.		
E. The edge shall be flush with the moldboard face to prevent snow build up on top of the cutting edge.		
F. A minimum of ten (10) full length vertical ribs shall reinforce the moldboard.		

G. The vertical rails shall be constructed of ½" x 3" formed steel continuously welded on both sides of edge to the moldboard sheet and secured at the top to the formed channel and to the structured angle at the bottom.		
H. Two (2) horizontal braces shall also reinforce the moldboard.		
I. The braces shall be constructed of ¼" x 2" x 2" angle or ½" x 3" flat bar continuously welded on both sides to moldboard sheets.		
J. The lower rear cross angle shall be provided with a minimum of ten (10) brackets ¾" thick welded on 88" hinge point centers for attachment to the table assembly at five (5) points with a minimum of 1" (72,000 lbs.) tensile strength pins.		
CUTTING EDGE:		
A. The cutting edge shall be fabricated from abrasion resistant steel with a Brinell Hardness of 250 minimum and 325 maximum.		
B. There shall be two (2) each of 1" thick x 8" wide x 66" long cutting edges. **NO EXCEPTIONS**		
C. The cutting edges to be AASHO standard punched and be easily replaced.		
D. All mounting hardware shall be grade 8.		
TRIPPING MECHANISM:		
A. To protect the plow, truck and operator from impact damage, the plow shall include a spring controlled full moldboard hinged spring mechanism. A minimum of six (6) heavy-duty extension springs shall be attached between the table and the moldboard.		
B. The spring materials must be ASTM-A229 oil tempered ½" wire, 4½" O.D. x 24 active coils with the end hooks cold formed to 90° right angles to each other.		
C. The spring force at 30.5" shall be a minimum of 1,050 lbs. and allow 14" of stretch without deformation.		
D. The springs shall maintain the vertical stability of the moldboard while plowing and facilitate a controlled trip/return action when coming in contact with any solid object while plowing.		
E. The trip springs shall be designed to have adjustable spring tension.		
F. Each spring shall be able to be adjusted individually by a threaded "J" hook or equivalent.		
G. A mechanical telescopic tripping post assembly constructed of a minimum of 1¼" x 2" inside bar, ¾" x 2¼" outside bare and reinforced with ¼" x 2" bars.		
H. The tripping post assembly shall be independent of the springs and must prevent the top of the moldboard from contacting the road surface.		
I. Two (2) 1" diameter pins with a minimum tensile strength of 72,000 lbs. shall connect tripping post to the moldboard and table.		

TABLE:		
A. The table shall be a circular arc design and be constructed of a one piece solid 4" x 4" x ½" structural angle, a 4" x ¾" bar shall be fabricated to conform to the outside radius with eleven (11) notches 1¼" deep x 1⅛" wide at the bottom and 1½" wide at the outer edge and welded in a vertical position along the underside of the 4" x 4" x ½" structural angle radius.		
B. The notches shall be sheared cut. Flame cutting to achieve curve and notches shall not be acceptable.		
C. Circular arc portion shall be welded at each end with an overlap to structural angles measuring 4" x 4" x ½" that continues the length of the semicircle and joins to the front square tube measuring 4" x 4" x ⅜".		
D. The joining of the semicircle to the front tube shall be reinforced on each side by 3½" x 3½" x ½" structural angle.		
E. The front of the table shall be provided with a minimum of ten (10) brackets ⅝" thick welded on 88" hinge point centers for attachment to the moldboard assembly at five (5) points with a minimum of 1" 72,000 lb. tensile strength pins.		
F. The front center of the table shall be designed for attachment to the "A" frame with a 1¾" diameter vertical pin with locked rotation to the A-frame and secured by a ⅜" roll pin.		
LIFT CHAIN:		
A. The lift chain assembly shall include a zinc plated 7/16" proof coil chain, repair link, two (2) ½" anchor shackles and a 7/16" grab hook clevis.		
B. There shall be two (2) tabs welded on the table for attachment of the lift chain.		
PUSH FRAME:		
A. The push frame shall be constructed of two (2) 4" @ 13.8 lb. ship channels with bracing and be in the form of an "A".		
B. The top and bottom of the push frame shall be ½" triangular shaped plate.		
C. Welded to the front of these triangular plates shall be a pair of ¾" x 4" steel brackets and between them a curved socket member shall be provided to relieve the pivot pin of thrust stress.		
D. The attachment pin at this point shall be a minimum of 1¾" diameter axle quality steel that shall engage with corresponding ears on the front tube of the semicircular frame.		
E. At the center of this box construction of plates and channels in the line of forward rotation shall be an assembly welded to form a continuous thrust beam.		
F. A latch part shall be incorporated which continues further to the rear and presses against a heavy duty latch spring measuring 5-7/16" o.d. x ¾" diameter spring wire with 9" of free travel.		
G. The spring shall be made of AISI 5160 hot rolled spring steel and shall be heat treated after cooling. Spring shall be closed and ground.		

H. The latch shall seat against a circular plate welded to the rear cross channel.		
I. Lubrication fittings shall be provided to allow ease of movement of slide assembly, which telescopes on the tubular member.		
J. The two (2) rear channels of the push frame shall be provided with a heavy-duty 1" thick cast steel adjustable ear for attachment of the push frame to the travel hitch with 1¼" diameter bolt. Ear spacing shall be 21". **NO EXCEPTIONS**		
HYDRAULIC REVERSING CYLINDERS:		
A. The hydraulic reversing mechanism shall consist of two (2) hydraulic cylinders nitride piston rods and a minimum of 2½" diameter and 10" stroke.		
B. The hydraulic cylinder housing shall attach to the push frame and the hydraulic cylinder piston shall attach to the front table tube with 1" pins secured by ¼" roll pins.		
C. Hydraulic cylinders shall be positioned to unlatch the semicircle and angle the moldboard to the desired plowing position.		
D. The latching mechanism shall operate automatically and monitor the moldboard in any of eleven (11) positions from 35° right or left in 7° increments.		
E. High pressure hydraulic hose connections shall be made to each of the two (2) cylinders with long 90° JIC elbow female swivel crimp hose fittings and extend to the rear terminating in male and female brass quick disconnect couplings. This will allow the hoses to be connected during storage. All couplings shall have lanyard attached rubber cap/plug covers.		
F. During operation, the hoses shall connect to the corresponding connections on the Authority trucks.		
MUSHROOM:		
A. The skid shoe assemblies must be of the hand adjustable type, enclosed and fully lubricated with replaceable chilled cast iron shoes “Mushroom” shaped of a minimum of 11" in diameter and 2½" thick.		
B. The design shall include an anti-flip top.		
C. The shoe housing to be constructed of 3" square tubing x 12" long and the shoe post to be constructed of 2½" square tubing x 11" long.		
D. The adjustment shall be accomplished by a threaded 1¼" diameter screw operated by a hand crank with rotating knob, which shall be self-locking and shall operate without the use of any tools. The adjusting screw shall be fully enclosed.		
LEVEL-LIFT ASSEMBLY:		
A. The level-lift assembly shall provide an automatic, mechanically activated mechanical control, which will hold a raised plow moldboard an equal distance from the ground to the bottom of the cutting edge.		
B. The level-lift mechanism will hold an equal elevation regardless of height raised above the road surface and regardless of moldboard plowing angle.		

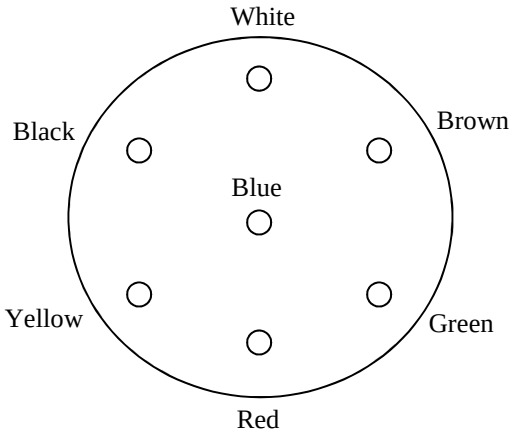
C. The moldboard plowing angle must be able to be changed to any desired position, maintaining equal elevation without first lowering plow, changing plowing angle and then re-lifting.		
PLOW MARKERS:		
A. The snow plow shall be equipped with two (2) 36" orange reinforced markers constructed of ¾" polymer reinforced with a ⅜" galvanized cable.		
B. Each plow marker shall be equipped with a crimped base 2-bolt mount installed at the upper outer most left and right corners of the moldboard and attached to a reinforced rib with bolts and nylock nuts.		
RUBBER BAFFLE:		
A. The snow plow shall be equipped with a ½" thick x 12" wide x 11' long rubber belting baffle.		
B. The baffle shall be bolted to top of moldboard with a ¼" x 2" x 11' steel keeper bar.		
MOLDBOARD SHOE:		
A. The snow plow shall be equipped with two (2) moldboard shoes.		
B. The moldboard shoe shall be constructed of cast steel and have a bearing wear surface of at least 75 square inches each.		
C. The moldboard shoes shall be attached directly behind the cutting edge and be designed to wear evenly with an 8" cutting edge.		
D. The moldboard shoes shall have two (2) 11/16" diameter bolt holes spaced on 12" centers for mounting to the snow plow.		
CURB BUMPER:		
A. Two (2) 2½" x 2½" x 8" cold rolled steel curb bumpers shall be continuous weld attached vertically to the lower left and right outside edge of the moldboard lower angle.		
B. The bottom edge of the curb bumper shall be positioned at a height equal to the moldboard shoe.		
C. The curb bumper shall not interfere with the plow blade attachment area.		
WELDING:		
A. All welds shall be continuous.		
B. All welding performed in the manufacturing of the snow plow shall be done by AWS certified welders.		
C. Proof of AWS certification shall be presented upon request.		
PAINT:		
A. All steel parts shall have the mill scale and oil removed by means of a high pressure chemical cleaner prior to painting.		
B. These surfaces shall be primed with a zinc rich, rust preventive primer.		
C. The finish paint shall be a high quality, high solid, polyurethane type enamel.		
D. All painting shall be done in conjunction with good commercial practices.		

E. All aluminum and stainless steel shall be left in its natural color:		
F. Paint color shall be DuPont Dulux Omaha Orange Enamel # 93-082 or approved equivalent.		
G. Paint shall be supplied in a two-step process.		
H. Orange base coat and additional polyurethane overcoat.		

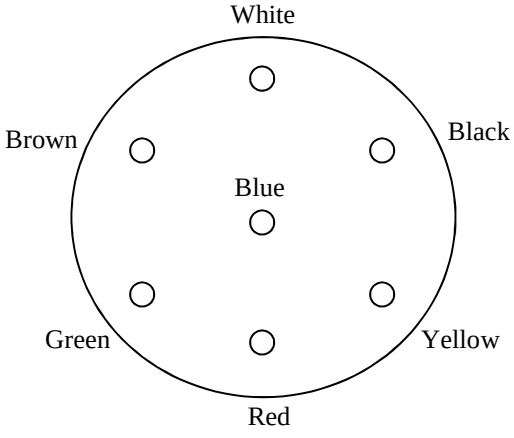
SPECIFICATIONS: 7PTC
7-POLE ROUND PIN TRAILER CONNECTORS ON TRUCKS AND TRAILERS

CONNECTOR MARKING COLOR	APPLICATION
WHITE	GROUND
BLACK	TAIL LIGHT
BROWN	TAIL LIGHT
YELLOW	LEFT TURN SIGNAL
GREEN	RIGHT TURN SIGNAL
RED	ELECTRIC BRAKE
BLUE	12-VOLT BATTERY-WITH 30-AMP AUTOMATIC BIMETAL THERMAL RESET CIRCUIT PROTECTION.

SOCKET MARKINGS



PLUG MARKINGS



SPECIFICATIONS: STRIPE PLATE/DUMP TRUCK

1. All stripes will be six (6) inches wide, forty-five (45) degrees from vertical.

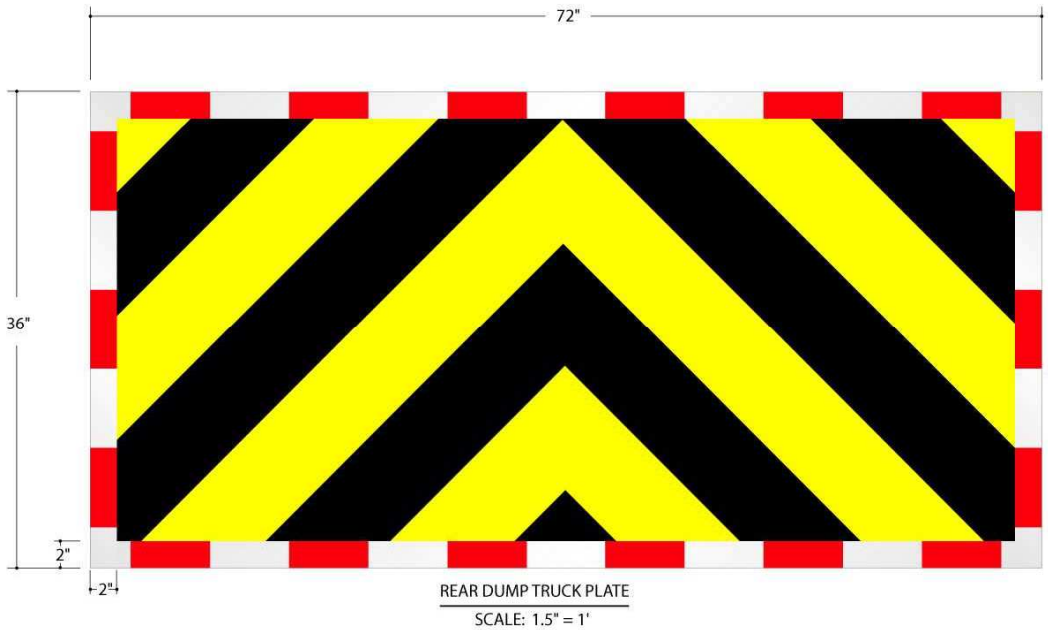
   a. The yellow stripes shall be Diamond Grade Fluorescent Yellow VIP Reflective Sheeting-3981, pressure sensitive or approved equivalent.
   b. The black stripes shall be Scotchcal 3650-12, pressure sensitive or approved equivalent.

2. There shall be a Diamond Grade Conspicuity Marking 981-326, Red 6", White 6" both 2" high, surrounding the top, bottom, and both sides of the stripes, pressure sensitive.

3. A striping plate of ⅛" aluminum shall be used and shall be striped and riveted (¼" diameter rivets) to tailgate. (Dimensions below are approximate).

4. The entire rear of the truck body shall be fully covered without covering any lights or accessories. Exact size of stripe plate shall be determined by contacting the NJTA Inspector prior to fabrication and mounting.

5. All materials shall be manufactured and applied as approved by the manufacturer.



FAILURE TO COMPLETE ALL AREAS MAY RESULT IN REJECTION OF BID

UNIT INFORMATION FORM

TRUCK CHASSIS:

YEAR:_____ MAKE:_____ MODEL:_____

ENGINE MAKE:_____

MODEL:_____CID:_____HP:_____@_____RPM

ALTERNATOR MAKE:_____MODEL:_____
AMPS:_____

BATTERY VOLTS/AMPS:_____
C.C.A. @ O° F:_____

TRANSMISSION MAKE:_____

MODEL:_____

BACK-UP ALARM MAKE:_____

SERVICING AGENCY:_____

LOCATED AT:_____

TELEPHONE #:_____

CONTACT:_____
Name & Title

DUMP BODY:

DESCRIPTION:_____

YEAR:_____MAKE:_____ MODEL:_____

INSTALLER:_____

SERVICING AGENCY:_____

LOCATED AT:_____

TELEPHONE #:_____

CONTACT:_____
Name & Title

HOIST:

YEAR:_____MAKE:_____MODEL: _____

CAPACITY:_____

INSTALLER:_____

SERVICING AGENCY:_____

LOCATED AT:_____

TELEPHONE #:_____

CONTACT:_____
Name & Title

HYDRAULIC SYSTEM:

MAKE:_____

HYDRAULIC PUMP
MODEL:_____

INSTALLER:_____

SERVICING AGENCY:_____

LOCATED AT:_____

TELEPHONE #:_____

CONTACT:_____
Name & Title

TAILGATE SPREADER:

YEAR:_____MAKE:_____MODEL: _____

SERVICING AGENCY:_____

LOCATED AT:_____

TELEPHONE #:_____

CONTACT:_____
Name & Title

ROTATOR LIGHTS:

YEAR:_____MAKE:_____MODEL: _____

SERVICING AGENCY:_____

LOCATED AT:_____

TELEPHONE #:_____

CONTACT:_____
Name & Title

SNOW PLOW LIGHTS:

YEAR:_____MAKE:_____MODEL: _____

SERVICING AGENCY:_____

LOCATED AT:_____

TELEPHONE #:_____

CONTACT:_____
Name & Title

SNOW PLOW:

MAKE:_____MODEL:_____

SERVICING AGENCY:_____

LOCATED AT:_____

TELEPHONE #:_____

CONTACT:_____
Name & Title

TARP:

DESCRIPTION:_____

YEAR:_____MAKE:_____MODEL:_____

SERVICING AGENCY:_____

LOCATED AT:_____

TELEPHONE #:_____

CONTACT:_____
Name & Title

SERVICE PARTS IDENTIFICATION FORM

Preventative Maintenance Items:			
Private label part number identification shall not be acceptable. A common automotive industry recognizable identification capable of cross referencing with manufactures such as Fram, Hastings, Puralator, Wix, etc. shall only be accepted.			
	Required Amount	**OEM Part #**	**After Market Part #**
Engine Group:			
Primary Oil Filter			
Secondary Oil Filter			
Air Filter			
Other			
Primary Fuel Filter			
Secondary Fuel Filter			
Water/Fuel Separator			
Coolant Filter			
Other			
Ignition Group:			
Spark Plug			
Spark Plug Wires			
Other			
Other			
Emissions Group:			
PCV Valve			
Other			
Drive Train Group:			
Transmission Primary Filter			
Transmission Secondary Filter			
Axle Housing Breather			
Other			
Brake Group:			
Compressor Intake Filter			
Air Dryer Desiccant			
Power Take Off Group:			
Hydraulic Filter			
Breather Filter			
Other			
Miscellaneous:			
Left Windshield Wiper			
Right Windshield Wiper			
Rear Windshield Wiper			
Cab Ventilation Filter			

Exception Form: Vendors must list exceptions for applicable items below. It shall be understood that if no exception is taken, the Vendor shall supply all material exactly as specified. Vendors may list proposed equivalent items below for consideration by the Authority, and should include the item number, item description, manufacturer's name, model number and packaging quantities of those items which the vendor proposes to substitute. Vendors may not use this form to attach conditions, limitations, or other provisos to their bid. Please be advised that any proposed equivalent or other exceptions that are deemed to be a material deviation from the specifications shall be a mandatory cause for rejection of the bid, and the vendor proceeds at its own risk.

Delivery Date Exception_____
Warranty Date Exception_____
Vendor's Name_____
Signature of Vendor Responsible Officer_____
Date_____